

ABSTRACT

Stewart, Ralsa M. Emerging Educational and Agricultural Trends and their Impact on the Secondary Agricultural Education Program under the direction of Dr. Gary Moore.

The primary purpose of this study was to identify the emerging trends in education and agriculture and their impact on the secondary agricultural education program. The study was conducted to serve the needs of state and national agricultural education program leaders as they develop future plans and activities for the program.

For this study, the researcher did a national solicitation for nominations to identify the experts in education and agriculture. This nomination process was conducted with national agricultural education leaders, state agricultural education leaders, university agricultural educators and agriculture teachers. The call for nominations was sent to 1,160 individuals via email. One hundred and forty-two experts were identified from the nomination process. Seventy-two of experts were in education and 70 experts were in agriculture. This group was narrowed to two panels of 50 experts in education and 50 experts in agriculture for round one. In round two responses were sought from the 32 educational experts and 25 agricultural experts that had responded in round one. In round three, 17 educational experts and 15 agricultural experts responded.

Initially, in round one, 264 educational issues and 180 agricultural issues were identified. This list was reduced to 40 educational issues and 24 agricultural issues for round two. This list was prioritized into a list of 19 educational issues and 17 agricultural issues. This list was prioritized to a group of 12 educational issues and six agricultural issues. Educational issues included: Finance and Budget, Teacher Recruitment, Teacher Education, Curriculum, Educational Leadership, Teacher Recognition and Reward,

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Teaching and Instructional Strategies, Standards, Legislation and Policy, Professional Development, Teacher Attitude, and State Leadership. Agriculture Issues included: Environmental Influences on Agriculture, Technology and Innovation in Agriculture, Food Supply and Safety in Agriculture, Trade Issues in Agriculture, Youth in Agriculture, and Urban Sprawl/Impact on Agriculture.

It was concluded that many of the educational issues have not changed dramatically over the years. Interestingly enough, education appears to be cyclical in many ways as issues and approaches of the past are re-discovered. Agricultural issues seemed to have broadened from a production focus to issues that deal with agriculture's relationship to society. The agricultural education program should be actively involved in influencing the future direction of education and agriculture.

**Emerging Educational and Agricultural Trends and their Impact on the Secondary
Agricultural Education Program**

by
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A proposal submitted to the Graduate Faculty of North Carolina State University
in partial fulfillment of the requirements for the Doctor of Education in Occupational
Education

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APPROVED BY:

Chair of Advisory Committee

In memory of my father

Ralsa Marshall Stewart, Sr.

BIOGRAPHY

On July 2, 1963, Ralsa Marshall Stewart, Jr. was born to Reverend and Mrs. Marshall Stewart in Elizabethtown, North Carolina. Throughout his youth, Ralsa lived in several rural and small town communities across eastern North Carolina. These communities provided Ralsa with the opportunity to learn, grow and mature as he had the chance to deal with change and diverse people at an early age. In 1968, Ralsa's brother Brian was born. Today, Ralsa has one son John Marshall Stewart who is ten years old.

Ralsa graduated from Midway High School in Sampson County in June, 1981. He attended East Carolina University for two years before transferring to North Carolina State University where he graduated with a bachelor of science degree in agricultural education in May, 1986. He returned to North Carolina State University on a part-time basis in the fall of 1987 and completed his master's degree in 1993. He started his doctoral program in the fall of 1996 as a part-time student.

Ralsa began his career as an agriculture teacher in 1986 at Midway High School. In 1988, he was recruited by the National FFA Organization and served that organization through 1993 when he was serving as director of teacher services. From 1994 through 1995 he served as executive director of the National Association for Agricultural Educators. In 1996 he was named as State Agricultural Education Coordinator at North Carolina State University and continues to serve in that position.

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Thanks go to Dr. Gary Moore for his encouragement as chair of the graduate committee for this degree. Thanks also go to Dr. Jim Flowers, Dr. David Jenkins and Dr. Jim Swiss for service on the graduate committee.

Finally, I thank God for providing great opportunities and giving wisdom in making wise choices. It is because of Him that this goal has been accomplished.

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CHAPTER 1

INTRODUCTION

Each year, a national publication entitled, *THE FUTURIST*, produces a top ten forecasts for the year. In 2002, four of their forecasts addressed educational and agricultural issues as follows (World Future Society, 2002, pp. 1-2):

1. Future farmers could make more money from air than the land by having one turbine on a quarter of an acre of land. The estimate is that a return of \$2,000 per year could be realized versus growing corn, which would bring in a return of \$100 per year.
2. Schools will solve behavior problems with better nutrition. One school eliminated fights, expulsions and suicides by offering students healthy foods and not allowing them to fill up on junk foods.
3. Goodbye textbooks, hello networked learning. Printed and bound textbooks will disappear as more interactive coursework is developed and distributed over the Internet.
4. Fish farming will overtake cattle ranching as a food source by 2010.

Aquaculture has been the fastest-growing sector of the world food economy over the past decade, while beef production has stagnated.

These forecasts point out the changes that could be occurring in education and agriculture in the future. Whether or not these forecasts are true, the important issue to consider is that change is coming and inevitable.

Herring (1995) stated, "In a dynamic, ever-changing world, I believe that perhaps the great challenge we face in agricultural education is that of anticipating and managing

change” (pp. 7-8). He predicted that agricultural education would face challenges in the future in the following areas: agricultural education mission, clientele, delivery system, modernization of supervised agricultural education programs, teacher education programs, in-service education programs, reform of agricultural education instruction, tech-prep, and updating curriculum.

On February 24, 2000 while chairing the 15th Annual Emerging Issues Forum, The Honorable James B. Hunt, Jr., Governor of North Carolina stated, “In this brief moment in time, just as we thrust ourselves into a new century, we must decide together the shape of our common future. We must identify critical issues and make strategic choices.” (Shaping Our Common Future, Emerging Issues Forum, 2000, p. 1) This statement points out further the need for this type of study. Choices made today by identifying critical issues and trends are essential for future planning for any field of endeavor. Certainly the secondary agricultural education program is no different. The secondary agricultural education program was first recognized as public school program when it received federal funding for the first time in 1917 after being recognized by federal law by passage of the Smith-Hughes Act by the United States Congress (Official FFA Manual, National FFA Organization, 2001). Although, this educational program has a long, rich heritage and tradition, it must not live on it’s past accomplishments. In today’s turbulent educational and agricultural environment, agricultural education program leaders must make appropriate strategic choices if they are to serve the public in the days ahead.

According to Ray Kurzweil, 1999 Medal of Technology winner presented by the World Technology Network, at today’s rate of progress, the next twenty years (2003-

2023) will be equivalent to the entire twentieth century in its rate of change. The following fourteen years (2024- 2038) will be equal the entire twentieth century's change. The seven years following (2039-2046) will equal the entire twentieth century's changes. Change and progress will continue to occur at a rapid pace. This is reinforced by Alvin Toffler who indicates that with rapid change students must be taught how to learn, unlearn and relearn (Case, 2003, slides 1-3).

Change is not a new field of intrigue and study. In 1971, the United States Department of Agriculture predicted that there would be more change in the next 30 years than there had been in the past 70 years. Thus they were predicting more change between 1971 and 2000 than had occurred between 1900 and 1971. This prediction of change was focused on how many people would farm, how many people would need to be fed, and how food would be distributed around the world (United States Department of Agriculture, 1971).

The world today is a very competitive environment. Erskine Bowles, former White House Chief of Staff, stated "The only competitive edge society has is in the skills and knowledge of the workforce" (Shaping Our Common Future, Emerging Issues Forum, 2000 p. 12). A highly motivated, well-prepared workforce is vital to a strong national economy. The significance of this statement is vitally important for many rural, agricultural communities. This issue is having implications on the national, state and local levels. For instance, in North Carolina's rural, agricultural communities, where the tax rate is more than in urban areas, Bowles (2000) indicates that \$50,000 less per classroom is being spent than is in our urban communities (Shaping Our Common Future, Emerging Issues Forum, 2000, p. 12). This issue is further complicated when one looks

at the changes that are occurring in the nation's rural, agricultural communities. For example, Dr. Mike Walden (2000), North Carolina State University economist, indicated that impending changes in North Carolina's tobacco economy will result in a loss of "at least" \$2.2 billion a year and 14,500 jobs per year in that one state alone. These statements may point to a need for an in-depth assessment of where the agricultural industry and educational system is headed if the agricultural education program, which is closely linked to both education and agriculture, is to effectively serve students in the future.

Demographic shifts in the United States point out another aspect of change that is occurring and that must be managed. The nation's population is very fluid and diverse. These factors are bringing about change in society, schools and communities. Over forty-three million Americans move every year with half of the United States population moving to a new address every five years. Seventy percent of Americans live in metropolitan areas with 40% of that group living in suburban areas (Hodgkinson, 2003). Today over 12%, one in eight people, in the United States is of Hispanic origin (United States Department of Commerce, 2003,).

Demographics impact education and agriculture. Issues like school building construction and urban sprawl are highlighted by these demographic shifts and have relevance to this study. This expansion was predicted in the 1971 Yearbook on Agriculture as follows: "By the turn of the century, we will need 400 more towns and cities and will bring an explosion of urban-type growth in areas that now consist of farm trading towns, placid villages, and fields and woodlots of farmers." (p. xvii).

The agricultural education program experienced substantial growth in the numbers of students enrolled and joining FFA in many states during the 1990's (National Council, p. 1-10; National FFA Organization, 2000, p. 1-20). FFA membership is currently 35% female, an all-time high, while only 39% of FFA members live on a farm (FFA New Horizons, 2000). These are significant changes for an industry, agriculture, that has been traditionally male and an organization, FFA, that had its beginning with farm students. Several factors have aided FFA growth, including but not limited to: (1) state legislation to reorganize and increase in state leadership staff in "some" states (North Carolina General Assembly, 1995); (2) significant growth in overall state public school student enrollment (United States Department of Education, 2000a); and, (3) major agricultural education curriculum revisions (National Council, 2000). While significant steps forward are positive in nature, one cannot rest on the accomplishments of the past. Program sustainability and growth can only continue if the program is prepared to adjust to the needs of the agricultural industry and dynamics of the educational system.

1.1 Statement of the Problem

The purpose of the study was to identify the educational and agricultural trends in the United States to enable leaders of the agricultural education program to make appropriate decisions regarding the future direction of the agricultural education program. These decisions would include, but not be limited to, curriculum direction, marketing efforts, professional development for agriculture teachers, and FFA programming.

First, there has been and continues to be significant changes occurring in the educational community. The nation has made some major shifts toward more student

testing and accountability, teacher salary increases, and financial incentives for performance and intervention into low performing schools. These factors have led to more pressure being placed on schoolteachers and administrators. This is interesting in light of the fact that public schools were focused on basics at the beginning of the 1900's and broadened their focus until the later part of the century when measurement and evaluation of progress on basic academic areas became the focus again. The 20th century opened with John Dewey's call for a "science of education." The push was on for greater curricular rigor, new forms of schooling, and systematized ways of measuring school results. The end of the 20th century had the information age spurring a drive for rigorous educational standards, national testing and new forms of schooling (Reeves, 2000). Furthermore, the differences between the funding levels in rural and urban schools have become a public concern. These funding issues and the increased pressure on educators has been further complicated by the severe shortage of certified teachers for the public schools.

Second, there are enormous changes occurring in nation's agricultural industry. These changes include the lowest commodity prices in the United States in over 40 years, consolidations in agribusiness, and increasing pressures on the livestock, poultry, and dairy industries from environmental advocacy groups. Furthermore, as reported by former Secretary of Agriculture Dan Glickman, "rural America, where most of the agricultural production in the nation exists, does not have the transportation, educational, and communications infrastructure to easily make a shift from the traditional agricultural economy" (Shaping Our Common Future, Emerging Issues Forum, 2000, p. 13).

Third, there is a need for state and national leaders to focus on emerging trends and issues in education and agriculture. Warmbrod (1986) indicated that agricultural education tends to pay greater attention to the significance and importance of those issues that are researched. This gives greater relevance to the need for identifying those issues and trends in the future. Buriak and Shinn (1993) reported that there was a need for maintaining compatibility with the national priorities for the food and agricultural science system and the educational system and for communicating agricultural education priorities to agencies and organizations which have national responsibilities to plan and budget future research.

Frick (1993) identified a list of agricultural education curriculum subject areas of highest priority to the future of middle grades agricultural education as follows: food safety/consumer relations; leadership/human relations; careers and future of agriculture; agricultural science and experimentation; agricultural vocabulary; and agricultural benefits to the world. This research generated a list of prioritized curriculum needs for one segment of agricultural education instructors. However, it did not take a more global view of issues facing the agricultural education program in the future.

In 1977, Stewart and Shinn reported that there were five areas of greatest importance to agriculture teachers, state supervisors and teacher educators. Those areas were curriculum development, funding, teacher education, teacher shortage and evaluation.

The dynamics that are occurring in the educational and agricultural sectors of the nation create challenges for the agricultural education program. Clearly, the agricultural education program is the intersection between these two sectors. Knowing the

environment and being able to adjust to the changes occurring in agriculture and education is critical to the future growth and, in fact, survival of the agricultural education program.

1.2 Research Questions

Over the years, the educational and agricultural sectors have continued to collect new data and produce reports regarding their special interests areas. One could find trend data on educational and agricultural issues. However, these data and these reports have rarely been considered with the agricultural education program in mind. This study pulls these two areas together to see what the implications are for the agricultural education program and to develop ideas for future consideration by leaders responsible for the agricultural education program. The two research questions for this study are:

1. What are the emerging educational trends in the nation?
2. What are the emerging agricultural trends in the nation?

1.3 Definition of Terms

A number of terms are used in this study that are specific to the agricultural industry, educational system, and agricultural education program. A listing of those terms with an appropriate operational definition for this study is as follows:

Agriculture – the food, fiber, and natural resources system including agribusiness, production, horticulture, aquaculture, forestry, research, etc.

Agricultural Education Program – the career and technical education program designed for students interested in agriculture in grades seven through twelve.

Charter Schools – schools that are granted the opportunity to operate in a state with state funding without the traditional regulations that are mandated to traditional public schools.

FFA – the student organization that is an integral part of the agricultural education program.

Home Schooling – a choice made by parents or guardians to provide kindergarten through high school education in the home setting.

1.4 Assumptions of the Study

The quality of the environmental scan and forecast information resulting from this research relies primarily on the panel of experts and on their combined judgment (Ludwig, 1997). An assumption is made for this research that the experts do have knowledge of the environment and the ability to communicate effectively. The Delphi is a “group process technique for eliciting, collating, and generally directing informed (expert) judgment towards a consensus on a particular topic.” (Delp et al., 1997, p. 168).

1.5 Chapter Summary

The researcher sought to determine the emerging educational and agricultural trends in the United States. The agricultural education program represents the intersection between education and agriculture by assessing the trends in these areas the researcher sought to surface the issues that state and national agricultural education program leaders must be aware of as they chart the future course of the program. Furthermore, the researcher attempted to develop specific recommendations for the national and state leaders of the agricultural education program based on the national trends occurring in agriculture and education.

This study was needed since there is a gap in the research that ask educational and agricultural leaders to provide input on the future trends of their particular areas of expertise and that could be applied to the future direction of the nation’s agricultural

education program. This begins to close that knowledge gap to assist leaders of the agricultural education program in their future planning.

CHAPTER 2

REVIEW OF LITERATURE

According to Campbell (1983), the identification of issues relevant to the operation of an enterprise is vital to the enterprise's success. The first step in issue management is issue identification (Chase, 1977). The need to anticipate is not new for agricultural education. Studies such as the one conducted by Stewart and Shinn (1977) and articles in agricultural education professional publications such as Herring's in The Agricultural Education Magazine (1995) point to the need for this type of issue research.

Connors (1998) found that there was agreement among agricultural education professionals regarding the need for more local funding and strong emphasis on teacher recruitment and retention. Connors reported concern from agricultural education professionals in the areas of student recruitment and retention, federal and state funding, and the development of partnerships and collaborative relationships with business and industry. According to the Connors study, there was need for updating the technology used in agricultural education programs.

A difference in the perceived issues of the agricultural education program was found in what state leaders and agriculture teachers thought versus teacher educators. State leaders and agriculture teachers agreed that school funding for FFA activities should be increased and the quality of teacher education programs had declined. Teacher educators only slightly agreed with the state leaders and agriculture teachers on the funding issue and strongly disagreed with a decline in the quality of teacher education programs (Connors, 1998).

In 1985, the National Academy of Science established the Committee on Agricultural Education in the Secondary Schools at the request of the United States Secretaries of Agriculture and Education. This committee was to assess the contributions of instruction in agriculture to the maintenance and improvement of United States agricultural productivity and economic competitiveness. The principle conclusions and recommendations from this report were: (1) The focus of agricultural education must change to encompass more than the traditional vocational agriculture program; (2) Beginning in kindergarten and continuing through twelfth grade, all students should receive some systematic instruction about agriculture. (National Academy of Sciences, 1988, p. 2). Daniel Aldrich (1988) stated, “Agricultural education is at a crossroads.” This crossroad is brought about by the variety of challenges facing education and agriculture. (National Academy of Sciences, 1988, p. vii).

2.1 Trends in Education

If one word could summarize education in the United States throughout the 20th century, it would be more. Today, more students are attending school for more of their lives than at any time in the nation’s history. At the beginning of the 20th century, a majority of Americans ages seven to 13 attended school. But only one in 10 students attended school beyond age 14 and fewer than seven percent of 17 year-olds graduated from high school (Olsen, 2000).

In 1900 there were 76.1 million people in the United States and 15.5 million children in public schools. By this time, 33 states and the District of Columbia had enacted compulsory education laws. By 1950, there were 152.3 million people in the United States and 25.1 million children in the public schools with 59% of 17 year-olds

graduating from high school. In 1970, there were over 205.1 million people in the United States and 45.6 million students in the public schools and 76.9% of 17 year-olds graduated from high school. By 1990, there were 249.4 million people in the United States and 40.5 million students in the public schools and 72.4% of 17 year-olds graduated from high school (Olsen, 2000).

America's schools have continued to operate as a mirror of society. Whatever American's hoped for from society, they assigned to schools to deliver. The public schools were created to educate citizens of a new nation. At the beginning of the 20th century, schools were expected to assimilate great waves of immigrants as Americans and transform farm workers into factory and technical workers needed in the industrial age. Now in the 21st century, schools are frequently asked to provide what parents and other institutions have not. For every social challenge there is a corresponding expectation that public schools will respond. Examples include: violence, teen pregnancy, and religious tolerance (North Central Regional Educational Laboratory, 2002a).

The role of the public schools as a mirror of society was recognizable in several different areas. In the early part of the 20th century, the practice of educating disabled students in regular schools and classrooms was rare. This began to change in 1958 with the passage of the Education of Mentally Retarded Children Act, which authorized federal funding to train teachers for teaching mentally retarded children. Subsequent federal laws in 1965, 1973, 1975, and 1990 provided funding for educational services and barred discrimination of disabled individuals (Sack, 2000).

Another area that schools have helped to mirror societal issues was with the issues of desegregation and racial bias. In 1954, the historic Brown vs. Board of Education decision declared that segregated schools were unconstitutional. Communities were forced to dismantle systems that required blacks to attend separate schools. This has been a complicated issue, but assisted the nation in addressing the issue of racial inequality (Hendrie, 2000).

Vocational education provides another example of how education has mirrored society. Snedden and Dewey debated the educational value and model that should be used in vocational and general education in the early 1900's. In 1917, the Smith-Hughes Act provided federal funds so that vocational education could be administered and taught on a mass scale separately from general education, either in its own wing of the a regular high school or in its own building. Over the years the image of vocational education has suffered, as it has been perceived as not being as rigorous as academic education. In 1963, the Vocational Education Act was passed and it focused heavily on at-risk students leading further to the perception that vocational education was not an appropriate course of study for students that wanted to attend college. In light of this perception, in 1990 the Carl D. Perkins Vocational and Applied Technology Act and in 1994 the School-to-Work Opportunities Act attempted to align vocational education more closely with academic education and to expose academic students to experiences in the workplace. These reforms have come about as society's interest and views on vocational education have changed (Zehr, 2000).

Enrollment in America's elementary and secondary schools was about 53.5 million in 2000. Public school enrollment in elementary school was 33.9 million while

high school enrollment was 13.7 million (Projections of Education Statistics, USDE, 2000). Of these 13.7 million students in public schools, approximately 14% dropped out of high school. Overall, the dropout rate has remained relatively unchanged since 1987 (United States Department of Education, 2002). Today, 29.4% of Hispanic youths dropout of school. This is twice the rate for black Americans and four times higher than non-Hispanic whites (Washington Post, 2003).

In 2001, there were 1.7 million home school students in kindergarten through 12th grade. This accounts for about three percent of all K-12 students in the United States. In 1999, there were 1,184 charter schools educating over 250,000 students in grades kindergarten through twelve. Of the total overall school-aged population in the United States, six million approximately six million attended private schools (Home School Legal Defense Association, 2002b).

Between 1990 and 1999, per pupil school expenditures increased almost 10%. In the 1996-97 school year the total amount spent on public elementary and secondary education was \$313 billion. Of these total revenues, 6.6% came from the federal government, 48% from the state and 45.4% from the local governmental level (Home School Legal Defense Association, 2002a).

The importance of the education funding issue is further highlighted by the inequity of funding that occurs between school systems at the state level. For instance, in North Carolina the urban Chapel Hill-Carrboro School System invested \$3,684.00 of local funds per student, while rural Hoke County School System invest approximately \$600.00 (Armstrong, 2003).

Teacher salaries are another issue being discussed today in education. Average teacher salaries have increased from \$27,496 in 1960 to \$39,385 in 1998, a 43% increase. The average teacher's work year lasts 180 days, three quarters of the 240-day year worked by typical Americans with full-time jobs. Interestingly enough, compensated at the same rate for a forty-eight week year, the average public school teacher would have earned \$52,513 in 1998 (Home School Legal Defense Association, 2002a).

Compounding this issue is the treatment of educators. Educators are knowledge workers with very little choice. Educators are to deal with century-old paradigms for financing education, which demands accountability without extending spending authority (North Central Regional Educational Laboratory, 2002b). Former North Carolina Governor Jim Hunt, Chairman of the National Commission on Teaching & America's Future stated in an interview with the American Family Association, "Working conditions are driving teachers from the classrooms. They do not have time for professional development. Many of them are treated like hired help – they have to keep the lunchroom and maybe some of them have to be in charge of the bathrooms. They do not have phones, offices or clerical help – we are not treating these teachers like professionals." By the end of the fifth year, over half of teachers have left the profession (Brown, 2003, p. 1).

The teacher issues have been further complicated by international student test score comparisons. In a 1999 follow-up to the 1995 Third International Mathematics and Science Study, the ranking of United States eighth graders fell to 19th in mathematics and 18th in science out of 38 nations. Between 1990 and 2000 the average SAT scores increased 19 points; however, between 1960 and 2000 the SAT scores decreased by 56

points. In 1998, 38% of fourth graders, 26% of eighth graders and 23% of twelfth graders scored below basic levels in reading (Note: They lacked even partial mastery of the knowledge and skills appropriate for their grade level). Since 1993, more than 10 million Americans have reached the 12th grade without having learned to read at a basic level. More than 20 million have reached their senior year unable to do basic math and almost 25 million have reached the 12th grade without knowing the essentials of United States history (Home School Legal Defense Association, 2002a).

Concerns regarding student test performance have implications for the future job market as well. The United States Department of Education (2003) predicts that over the next decade over 70% of the jobs will require a postsecondary education (less than a Baccalaureate Degree) and 20% of the jobs will require a Bachelor's Degree. However, fewer than one of every three students that go to college earn a degree within 10 years after graduation. Nearly half of the postsecondary students require remedial course work during their first year of college, costing approximately one billion dollars. Over 20% of four-year college students and over 40% of two-year college students drop out of school in their first year (Home School Legal Defense Association, 2002a).

A 2000 public opinion poll entitled, "Reality Check" found that 33% of college and university professors and 39% of employers believe that a high school diploma should mean that a student has learned the basics. However, in a separate study, 66% of parents, 74% of teachers and 77% of students believe that a high school diploma equals mastery of the basics (Home School Legal Defense Association, 2002a). The importance of these perceptions and expectations are further drawn out by the investment that American companies make each year in training and remediation for their employees. In

2000, 2.5% of annual payroll is spent on training expenditures. This total investment is in the millions of dollars annually. (Association for Training and Development, 2003)

The uncertainties surrounding public schools, have led to the creation and growth of several educational reform movements. Those movements include charter schools, vouchers, home schooling and testing/accountability. The first charter school legislation was passed in 1991 in Minnesota. Since that time, 32 other states and the District of Columbia have passed similar legislation (Hirsch, 1998). The charter sponsor may be a school district, college or university, state education agency, teachers, parents or other community members (Collins, 1998). While proponents of the charter concept argue for the competition that it brings to education and the focus on creativity and innovation, the opponents argue that charter schools drain public funds away from existing public schools and run the risk of becoming elitist facilities (Vittiello, 1999).

School vouchers present another current trend in education. A 1999 Public Agenda survey of members of the general public found that 66% of parents and 60% of parents with children knew very little or nothing about school vouchers and how they work. After parents were provided with definition of vouchers, their support increased dramatically with 70% of parents indicated that they would definitely use or seriously consider using vouchers (Zehr, 1999).

Another alternative to the public school system that has developed momentum over the past decade is home schooling. Home schooling in the United States has been growing at a rate of nearly 15% per year for the past 10 years. In 2001, there were 1.7 million home school students (Home School Legal Defense Association, 2002a). For many the home school movement is a return to the historical individual rights of the

nation so that they may form more meaningful bonds with family and community. Key reasons for home schooling are the transmission of distinct set of values to children, family relationships, positive peer interaction, quality academics and safety. Home school students scored in the 79th percentile in reading, the 73rd percentile in language and the 73rd percentile in math. This compares to the national average of the 50th percentile. (National Home Education Research Institute, 2002a). A cost benefit analysis reveals that an average of \$546 is spent per home school student per year versus \$5,325 per public school student (Home School Legal Defense Association, 2002a).

Accountability is another major influence that is on the forefront of the education environment today. This influence was initially started at the federal level through the 1983 release of “A Nation At Risk” which outlined many of the shortcomings of America’s schools. In the mid to late 1980’s, many states adopted educational reformed aimed at addressing the concerns outlined in this report. In 1990, President George Bush called a National Education Summit of the nation’s Governors to address this issue. Broad goals addressing literacy, math competency, safe schools, certified teachers, etc. were outlined. This served as another push for greater accountability and thereby results from the nation’s schools (National Education Goals Panel, 2001). This effort was further emphasized by the fact that today over 191 million adults in America are at the lowest literacy level, meaning that they are able to perform only the simplest writing and reading tasks (National Institute for Literacy, 2000).

This effort was boosted further in 2002 with the passage of the “No Child Left Behind” (NCLB) legislation of the President George W. Bush administration. This legislation calls for strong testing and accountability at every grade level in the areas of

reading, writing and math. This legislation was created as a response to national educational concerns related to the federal investment in education and results that were occurring. In 1965 the Elementary and Secondary Education Act first passed Congress. Since that time over \$321 billion has been spent by the federal government. However, now 40 years later only 32% of fourth graders can read at grade level. Meanwhile, according to the NCLB web site, twelfth grade science scores have declined and 60% of twelfth graders cannot read proficiently. Another factor that is addressed through the legislation is the high number of minority students that are falling even further behind the national averages. This legislation also aims to address the issue of teacher quality. Today, only 41% of eighth grader math teachers majored in math. Twenty percent of all public education students in grades seven through 12 were taught English by a teacher who did not major or minor in English or a communications-related field. Over four million students in physics, chemistry and history are taught by teachers lacking preparation in their teaching subject area (United States Department of Education, 2003).

The NCLB legislation is based on four principles as follows: (1) Accountability – guaranteeing results; (2) Flexibility – local control for local challenges; (3) Research-Based Reforms – proven methods with proven results; (4) Parental Options – choices for parents, hope for kids (United States Department of Education, 2003).

In recent years a push for standardization in public education has been driven by the public's desire to see that every student receives at least a basic education. The public has also exhibited a low tolerance for experimenting with outcomes when students' lives are at stake (North Central Regional Educational Laboratory, 2002c).

The North Central Regional Educational Laboratory (North Central Regional Educational Laboratory, 2002d) conducted an emerging educational issues scan in 2002. This environmental scan surfaced three broad issues as follows: (1) Quality, Technology, and Equality – education’s ability to deliver high quality education through the use of the latest technology that is equitable; (2) Impacts of Choice on Education – the student and parents opportunity to choose the educational path that they will take by providing them with flexibility and the financial resources to make their choice a reality; (3) Relation of Education to Social Change – education can have a significant role in addressing ills of society and society can have a great influence on the educational system (North Central Regional Educational Laboratory, 2002a). This national trend scan is further supported by Hugh McColl, CEO, Bank of America, who said, “We must spend more money in educating our population, both the very young and adult, if we want to have economic prosperity; it’s the winning formula: Start early and don’t stop.” (Shaping Our Common Future, Emerging Issues Forum, 2000, p. 9).

The national debate regarding schools was summarized well by Comer when he stated, “Given the purpose of education – to prepare students to become successful workers, family members, and citizens in a democratic society – even many good traditional schools, as measured by high test scores, are not doing their job adequately. But test scores alone are too narrow. A good education should help students to solve problems encountered at work and in personal relationships, to take on responsibility of caring for themselves and their families, to get along well in a variety of life settings, and to be motivated, contributing member of a democratic society.” (North Central Regional Educational Laboratory, 2002c, p. 2)

2.2 Trends in Agriculture

From my vantage point, agriculture stands poised for the 21st century and we remain committed to ensuring the future of this vital industry. (Jim Graham, Former North Carolina Commissioner of Agriculture and Consumer Services, 2000)

In 1930, one farmer supplied enough food and fiber for 9.8 people in the United States and abroad (United States Department of Agriculture, 2003). By the 1960's, that number had grown to 25.8 people in the United States and abroad. By the last 1990's, one farmer supplied enough food and fiber for 129 people in the United States and abroad (Agriculture Council of America, 2003).

In 1930, it took 15 to 20 labor hours to produce 100 bushels of corn. By the 1950's the number of labor hours had gone down to six to 12 hours. The number of labor hours required to produce a bushel of corn by 2000 had gone down to 2 ¾ hours (United States Department of Agriculture, 2003).

In 1900 the average farm size was 147 acres (Agriculture Council of America, 2003). In the 1950, the average farm size was 216 acres. By 1990, farm size had increased to 461 acres. In 1950, farmers made up 12.2% of the labor force. By 2000, approximately 2% (approximately two million people) of the United States labor force was farmers (United States Department of Agriculture, 2003).

Farm equipment has evolved from a team of horses in the early 1900's. Today, a four-wheel drive tractor has the power of 40 to 300 horses. However, this is not without costs. A farmer pays between \$97,000 to over \$170,000 for a tractor (Agriculture Council of America, 2003).

Over the past 100 years, agriculture has changed dramatically. According to former North Carolina Commissioner of Agriculture Jim Graham (2000), Department of Agriculture and Consumer Services, one of the most important advances has been computer technology. He indicates that the impact is felt in every area of our lives including agriculture. Farmers have gone from using primitive, mule-driven plows of yesteryear to the sophisticated computer-enhanced analysis tailored to their fields, which indicates the precise amount of fertilizers and nutrient additives needed to produce optimal results. Scientific research is continuing to develop smarter seeds that are drought and bug resistant and that allow for maximum yield. All of this allows a farmer to plant less acreage while at the same time obtain higher yields, making food prices more reasonable for consumers. In many cases, the advances made on the farm delivered a better standard of living to the rest of the world. We must ensure that farmers be included in the prosperity of the nation as opposed to being a forgotten group of people. Finding ways to boost the commodity prices or trim grower costs will need to be of one the biggest priorities of the future. (Graham, 2000, p. 1-2)

Significant change occurred in agriculture throughout the 20th century. Much of that change was driven by the technological advances that occurred between World War I and World War II (Rasmussen, 1975). The internal combustion engine was one of the technological advances that help to reduce the need for horses and mules and increased efficiency led by the invention of tractors and other related farm machinery such as balers and corn pickers (Cochrane, 1979). In addition to leaps forward made by agriculture due to the combustion engine, the development of hybrid seed corn revolutionized production agriculture. Early corn breeding programs were started in the

Corn Belt in the 1920's which eventually led to the interchange of breeding materials between different parts of the country. Groups such as the Southern Corn Improvement Conference helped to advance the corn breeding programs. Evidence of the reception that hybrid seed corn had in the southern United States was demonstrated by the dramatic increase in the use of hybrid seed corn between 1941 and 1946. In 1941, there was 1,029,000 acres of hybrid corn grown in the southern United States. Five years later, in 1946, 5,469,000 acres of hybrid corn were grown. This brought about a major advance in the productivity of corn as was simultaneously being experimented with other crops (Rasmussen, 1975).

There are powerful forces are propelling agriculture toward a new dimension in the 21st century. Oltmans (2000), suggested that there are five major drivers of change in the future for agriculture, including: (1) science and technology; (2) expanding global markets; (3) shifting population; (4) social and political activism; (5) structural change.

First, in the area of science and technology, Oltmans projects that biotechnology and information management are forever changing the models we use for doing business and communicating. The science and technology area is producing a new model of doing business and reducing the barriers, socially, culturally and geographically, that have traditionally existed (Oltmans, 2000).

Second, expanding global markets are causing the agricultural economy in the United States to become less isolated and more volatile and therefore subject the global forces. We will become unemployed if we do not think globally (Oltmans, 2000).

Third, shifting population in rural areas is being driven by the locating of agribusinesses to areas that have high quality access to education, transportation, health

services, water, etc. This dynamic is creating rural “satellite cities” of 10,000 in population or more that results in rural islands of prosperity and agricultural growth while leaving behind more isolated rural areas. In the future, some rural areas will go unserved and this will be a downside of the changes in agriculture (Oltmans, 2000).

Fourth, social and political activism has great effect on the agricultural economy. Rural populations are becoming increasingly dominated by people who do not know, understand, or care about the agriculture’s concerns and needs, which will shake up traditional agricultural politics and practices. Society’s concern has shifted more toward social, environmental and political issues that impact agriculture. Working with these players and incorporating them into the debate will be a tough challenge for agriculture in the future (Oltmans, 2000).

Finally, structural change will continue to have impact on the agricultural industry. The two primary modes of farming in the future will be small, part-time farms and large industrialized farms. This change is focusing most production agriculture on food products rather than food commodities. Food products are defined as value-added or crops grown specifically for medicinal purposes. This is leading to more interdependence in agriculture and less independence (Oltmans, 2000).

More than one in six jobs in the United States stem from agriculture. The impact of this influences the recognition of some states as being agriculturally dependent. This is primarily based on the comparison of a state’s total workforce and the relative importance of selected groups of workers on a state’s food and fiber system. California, for instance, has the largest number of workers who owe their jobs to agriculture, 2.7 million. However, California is not considered agriculturally dependent since that

statistic represents only 16.9% of the state's workforce. Agriculture's national share of the agricultural workforce is 17.8%. In contrast, the Dakotas are agriculturally dependent since over 25% of the total workforce in both states is involved in agriculture. However, the Dakotas represent less than one percent of the nation's total agricultural workforce. These statistics have significant impact in the political arena. As federal and state legislators set policy for their state and nation, a smaller number of agriculturally dependent states result in agriculture having less influence (Edmondson, et. al., 1986).

During the 1981-1997 period, some shifts in the agricultural workforce were revealed. For instance, in 1981, North Carolina ranked eighth in the nation in the number of people involved in agriculture. In 1997, North Carolina still ranked eight, but had grown by 15% from 789,500 workers to 907,000 workers. This type of shift has an impact on not only the agricultural sector, but also on the economical and educational system (Edmondson, et. al., 1986).

In 1986, the United States food and fiber system employment sector represented 17.8% of the total workforce. The growth in this sector was occurring primarily in the consumer end of the delivery chain. These jobs tended to be in transportation, wholesale and retail trade and food service. The impact of the influence that the agricultural workforce has on the economy of states is significant. It can be said that in those agriculturally dependent states, as agriculture goes, so goes the state's economy (Edmondson, et. al., 1986).

A high percentage of the agricultural workforce is not on the farm. Since 1935, the total number of farmers has declined from 6.5 million to less than two million. Factors that have led to this change have included uncertainty in the agricultural

economy, farm programs that helped large farmers and hurt small farmers based on the production level they could reach and the rush to adopt to modern technology (Cochrane, 2002). Interestingly enough, the 1971 Yearbook of Agriculture predicted that by 2000 there would be less than two million farmers (United States Department of Agriculture, 1971).

The creation of an oligopoly in agriculture has produced a situation in which there are fewer buyers and suppliers. This oligopolistic structure has resulted in an environment where a few large firms control non-farm produced inputs (herbicides, farm machinery, etc.), few buyer exists for the farmers' products and at the retail level a few grocery chains are responsible for 40% of the all retail food sales (United States Department of Agriculture, 2002).

Globalization is also having a dramatic impact on the agricultural economy. Globalization is driving agriculture toward large production corporate agricultural operations. This has been great for the consumer as the retail cost for the consumer's market basket at the grocery store remained constant from 1984 to 1999 (Christison, 2002). Since 1984, the real price of a market basket of food has increased by three percent while the farm value of that food has fallen by 38%. To further point this out, the real farm to retail spread for a gallon of milk has increased by 14.3% while the prices received by dairy farmers have dropped dramatically, nearly 50%. A bushel of corn sold for less than four dollars per bushel while a bushel of corn flakes sold for \$133.00 in 1998. In 1998, cereal companies were 186 to 740 times more profitable than farms. In 1999, farmers received twenty-one cents on one dollar brought in at the retail level. Ten

years earlier, farmers were receiving thirty-two cents on one dollar for every retail sale (United States Department of Agriculture, 2002).

Another factor that is having a dramatic impact on agriculture is concentration. Fifty-eight percent of the beef industry in the United States is controlled by two companies, IBP and Cargill. Four companies, DuPont/Pioneer, Monsanto, Syngenta and Dow, control 69% of the North American seed corn market and 47% of the soybean seed market. In 1998, Monsanto controlled 87% of the United States cottonseed market and sold 88% of the genetically engineered seeds in the United States. The move to corporate hog farms has led to a 70% decrease in the number of independent swine producers in the past 15 years (United States Department of Agriculture, 2002).

The United States agricultural industry is going through significant structural changes in product characteristic, worldwide production and consumption, technology, size of operation and geographic location. These changes are occurring for three primary reasons: (1) capturing efficiencies and controlling costs; (2) reducing risks; (3) responding to consumer demands. From 1990 to 1999, 725 acquisitions, mergers, strategic alliances and/or partnerships took place in agriculture (American Farm Bureau Federation, 1999).

The current trends in agriculture are having a negative impact on farm income. The long-term look for individuals involved in agricultural production is bleak when one looks at the equity returns. The annual return to farmers is 2.38% compared to retail food returns of 18% compared to food manufacturers at 17.2% and banks at 10.8%. Agricultural trade policy has had a significant impact since the 1996 Farm Bill which was suppose to move American agriculture to a free-market scenario. Between 1996 and

1998, United States corn prices fell by 56% and wheat prices fell by 46% (United States Department of Agriculture, 2002a).

The efficiency of farmers in the United States benefits consumer in this country. United States consumers spend approximately 10% of their income on food compared with 11% in the United Kingdom and 17% in Japan. This has been the result of tremendous leaps forward in technology over the course of the 1900's (ACA, 2003). In 1965, Americans spent 19% of their average take-home pay on food and in 1950 they spent 26% on food. (United States Department of Agriculture, 1965, p. v)

The American diet has shifted over the past 25 years. In 1996, Americans consumed an average of 77 pounds more of commercially grown vegetables, 63 pounds more grain products, 54 pounds more fruits, 32 pounds more poultry, 20.5 pounds less red meat, 73 fewer eggs and seventeen gallons less whole milk than they did in 1970. These shifts are the result of consumer preferences, dietary concerns, disposable income increases, food assistance for the poor, and new value-added products (United States Department of Agriculture, 2002).

Retail cuts of meat are 15% leaner today than 20 years ago. For example, a pork tenderloin has only one more gram of fat than a skinless chicken breast. Twenty-seven percent less beef fat is reaching the retail meat case than in 1985 (Agriculture Council of America, 2003).

However, the American dietary situation is not reflective of the world. Globally, over 800 million people are chronically malnourished (Council for Biotechnology Information, 2003). Although the average food intake and standard of living have improved substantially around the world, the undernourished has double in Africa.

Agricultural productivity has seen revolutionary progress, poverty alleviation, especially in poor and rural areas, has been disappointing. It has become progressively clear that hunger results not so much from insufficient food supplies, as from people's lack of access to those supplies (United States Department of Agriculture, 2002a).

Today's biotechnology is having a dramatic impact on the future of the world. Two key areas are making more food available to meet dietary needs and by making better foods that are high in vitamins. The implications are for this can be seen in how food manufacturers in the United States addressed rickets in the 1930's by adding vitamin D to bread to milk. This addition in the 1930's virtually wiped out rickets. Another example of the implications that biotechnology has surfaces in the area of productivity. In 2001, the United States produced an additional four billion pounds of food and fiber. This creates not only more food, but also more farm income (Council for Biotechnology, 2003).

Advances in technology and in particular biotechnology help to save over one billion tons of soil per year. These changes in farm management practices have made significant leaps throughout the 20th century. This is a positive for farming and for the environment (Council for Biotechnology, 2003).

World population is expected to top eight billion people by 2030. This will mean that there are an additional two billion mouths to feed, most in developing nations. The United Nations predicts that by 2050, approximately 4.2 billion people may not have their daily basic needs met. This will require farmers to double their production on the current farmland of the world over the next 25 years or an additional four billion acres

will be needed if farm production on current farmland does not increase (Council for Biotechnology, 2003).

These dramatic projections regarding the future of world food production needs is contrasted by consumer demands for food in the United States over the past decade. United States consumers are demanding more high quality food products. Foods like prime steak and fine wines are in high demand; a shift from the earlier part of the 20th century. Dining once was about filling one's stomach. Today, it is an entertainment experience. This has also been reflected in the development on new niches for farmers and ranchers. Today many farmers and ranchers are receiving income from hunting rights, working vacation opportunities and other outdoor land experiences that they can offer to consumers. This trend is expected to grow in popularity among the 98% of the population that is not attached to the land (Catlett, 2003).

2.3 Chapter Summary

Education and agriculture are in a turbulent and challenging time. It is difficult, based on the issues addressed in this chapter to think of a time when these two sectors would be faced with any more controversy and instability. The issues that separate urban and rural areas cut heavily along the lines of education and agriculture.

Education is facing major changes. Heavy emphasis on educational reform initiatives like vouchers, charter schools, home schooling, school funding, accountability, testing, and teacher quality are re-shaping the educational landscape. The disparities between rural and urban schools are reaching crisis proportions and the pressure to recruit and retain high quality teachers has reaching critical point. These factors are substantial and integral to the future of the economy in rural and urban areas.

Agriculture is facing major changes. Not only will what farmers grow be different, but also the global impact of how they grow and market their crops and livestock will be significant. Clearly, astute business skills, global understanding and flexibility will be keys to the future of those involved in the agricultural industry.

At the intersection between these two sectors, the agricultural education program finds itself at a critical decision point as to the types of initiatives it should develop in order to thrive in the future. The knowledge gained through this study could be beneficial in that decision-making process.

CHAPTER 3

Methodology

The purpose of the study was to identify the emerging educational and agricultural trends to enable state and national agricultural education leaders to make appropriate decisions regarding the future of the agricultural education program. This chapter describes the methodology to implement this study. The research design, population, instrumentation, data collection procedures, and analyses are described and documented.

3.1 Research Design

The type of research used in the study was survey research using the Delphi technique (Sackman, 1975). The Delphi survey technique was developed in the 1950's by two research scientists working at the Rand Corporation, Olaf Helmer and Norman Dalkey. They developed the procedure as a tool for forecasting future events using a series of intensive questionnaires interspersed with controlled-opinion feedback (McCampbell & Hemler, 1993). Participants were solicited experts in the issues related to national defense in regards to the tensions between the United States and Russian governments.

For this study two panels of national experts, one in education and one in agriculture, were used. The study sought to determine the national trends in these two sectors. This design enabled the researcher to develop consensus on a number of issues without face-to-face confrontation (Helmer, 1966). Delphi operates on the principle that several heads are better than one in making subjective conjectures about the future...and that experts will make conjectures based upon rational judgment rather than merely

guessing.” (Weaver, 1971). An obvious, but true reminder, comes from Ludwig (1997) who indicated that the forecasting done by a panel of experts is only as good as the opinions that go into it.

3.2 Panel Selection

The population was comprised of two panels of experts. When an expert panel has at least fifteen members and is truly representative of the expert community, the Delphi method is reliable (Dalkey, Rourke, et. al., 1972). Dalkey, Rourke, Lewis and Snyder (1972) indicated that a group size of 13 was needed for reliability with a correlation coefficient of .9. Therefore, she recommended a group size of twelve to fifteen. Sutphin suggested that the sample should be large enough to obtain the amount of expertise necessary to effectively conduct the study. Beyond this number, the sample size should be held to a minimum to reduce cost and an over abundance of data which becomes cumbersome and yields not additional information for the study. He recommended, “Fifty experts from each group were sufficient.” (Sutphin, 1981, p. 52)

The agricultural panel was comprised of a cross-section of the agricultural community including commodity leaders, farmers, agribusiness representatives, policy-makers, educators, students and extension personnel. The educational panel was comprised of a cross-section of the educational community including teachers, school administrators, school board members, policy-makers, educational organization leaders, students, and parents.

The panel was identified through a national nomination process (Appendix H). Over 1,160 state supervisors, university educators, teachers and national staff in agricultural education were contacted via email and asked to nominate up to five experts

each in agriculture and in education (Appendix A). Two requests for nominees were conducted with a total of 72 education experts and 70 agricultural experts being nominated (Appendix I). These experts represented the diversity of education and agriculture and the geography of the United States.

Narrowing these nominees to a manageable group of experts was the next challenge. Each nominee had a brief biographical sketch. These nominees were reviewed by the members of the researcher's graduate committee. Based on the needs of the study and nomination information, a group of 50 education leaders and 50 agricultural leaders were selected. The educators were from 26 states and all major geographic regions of the nation. The agriculturists were from 20 states and all major geographic regions of the nation. The nominees were purposefully selected to insure that a wide range of educational and agricultural backgrounds were represented on the expert panel.

Table 1

Expert Panel Selection and Participation

Criteria	Agriculture	Education
Number nominated	70	72
Number asked to participate	50	50
Number who responded to Round One	25	32
Number who responded to Round Two	20	22
Number who responded to Round Three	15	15

3.3 Instrumentation

In a Delphi study multiple questionnaires are used (Ludwig, 1997). The development and the administration of the questionnaires were interconnected. Three

rounds of questionnaires were used in the study. The first questionnaire asked the participants to identify up to 10 of the most critical issues facing education and agriculture respectively (Appendix J). They were asked to confirm their interest in participating in the study and indicate their preferred method of communication as follows: e-mail, regular mail or fax (Appendixes B & C).

The second-round questionnaire was developed by the researcher based on the information collected in the first round (Appendix K). A five-point, Likert-type scale was used by the participants to rate the importance of the issues. In round two, respondents were asked to share comments and suggestions in regards to each item (Appendix D & E). In round two, two follow-up reminders were conducted via email to increase the response rate.

The third-round questionnaire asked the participants to rate the importance of the issues on a five-point, Likert-type scale and to rank the items in terms of their importance and impact on agriculture or education respectively (Ludwig, 1997) (Appendix L). In round three, respondents were asked to share comments and suggestions in regards to each item (Appendixes F and G). They were also given the opportunity to share thoughts and ideas that they thought may have been overlooked in that particular round. In round three, one follow-up was done via email to maximize the response rate.

3.4 Data Collection Procedures

Each individual on the two panels of experts received an initial letter from the researcher outlining the overall objectives of the study and asking them to serve as a participant (Appendix H & I). Also, included in the mailing was a survey instrument that requested that each person identify up to ten major issues for their respective panel

assignment (Appendixes B and C). The expert panelists were identified based on the confirmations that were received. Thirty-two educational experts responded positively and twenty-five agricultural experts responded positively indicating they were willing to participate in the study and with a list of trends and issues for their respective areas of expertise.

After receiving the instruments back from the first round, the researcher developed two second-round instruments (Appendixes D & E). The first round identified 264 issue responses in education and 180 issue responses in agriculture. Many of the issues were identified more than one time. Based on the responses and frequency of responses, the researcher collapsed the initial education and agriculture lists to 40 educational issues and 24 agricultural issues. Each issue was a major topic area with a brief description of what that issue area entailed. This instrument was reviewed by agricultural education university educators.

During the second round, the researcher sent the instrument that had been developed from their initial input to the respondents for further refinement. The panels were asked to rate the items on a five-point Likert scale with one being not important and five being very important. They were asked to add items that they thought were missed and to offer comments regarding clarifications that they thought might be needed for each item. The respondents were given two weeks (10 working days) to respond to round two. After the second round, two follow-ups were done via email with each participant that had not responded by the deadline. This resulted in two more responses from both expert panels. In the end, 22 educational experts responded and 20 agricultural experts responded.

The results from the second round surveys were reviewed and compiled by the researcher. Nineteen educational issues and 17 agricultural issues remained based upon the rating given on the five-point Likert-type scale. These priority issues as identified in round two were used to create the round three instruments (Appendixes F & G). The educational instrument had 19 issues and the agricultural instrument had 17 issues. These instruments gave each respondent an opportunity to share additional recommendations and comments.

Data collected for this research round was analyzed using the mean from a five-point Likert-scale rating. As the priority trends were identified in round two, the researcher looked for similar language and themes to combine for the third round instrument. These themes were shared with and reviewed with the graduate committee chair for final approval. In round two the ratings of the participants were compiled and averaged. These averages resulted in the identification of a break after a mean score of 3.95 on a 5.0 point scale for the educational expert panel responses and 3.7 on a 5.0 point scale for the agricultural expert panel responses. Educational items having less than a 3.95 mean score on a 5.0 point scale and agricultural items having less than a 3.7 mean score on a 5.0 scale were dropped.

The round-three instrument for education had 19 issues and the round-three instrument for agriculture had seventeen issues. In round three, the participants were asked to rate the items on a five-point Likert scale as in round two and to rank the items one through 19 in education and one through 17 in agriculture. In round three, the ratings of the participants were compiled and averaged. These averages resulted in the identification of a break after 4.0 for the educational expert panel responses and 4.0 for

the agricultural expert panel responses. Educational items having less than a 4.0 mean score and agricultural items having less than a 4.0 mean score were dropped. In round three, 12 experts responded from the educational panel and 13 from the agricultural panel. One follow-up reminder was sent to the non-respondents and three more educational experts responded and two more agricultural experts responded for a total of 15 from each panel of experts.

CHAPTER 4

RESULTS

The purpose of this study was to identify the trends and issues in education and agriculture and to develop recommendations for action for national and state agricultural education leaders. This study began in the summer of 2002 and was completed in the spring of 2003. The research methodology used in this study was the Delphi technique. The Delphi technique utilized two initial panels of 50 experts each to identify issues and to prioritize those issues through a series of surveys. Three rounds of surveys were used in this study.

4.1 Findings Related to the Research Questions

This study had two research questions. Those questions focused on identifying the emerging trends in education and agriculture. The researcher hoped to be able to use the results to make recommendations regarding the future direction of the agricultural education program.

The first round of the research study resulted in 32 educational expert responses. The participants submitted 264 educational issue responses. These issues ranged from home schooling to vouchers to school discipline to curriculum to funding. The first round of the study resulted in 25 agricultural expert responses. The respondents submitted 180 agricultural issues. These issues ranged for water quality to agricultural legislation to bio-terrorism to biotechnology to youth in agriculture. These extensive lists of issues had some duplication of topics. The researcher sorted through these issues and compiled a list of 40 educational issues and 24 agricultural issues. The compilation and summary of issues completed by the researcher was reviewed for accuracy by agricultural

education university faculty. The researcher developed a description for each issue to assist the respondent in understanding the issue.

An instrument was developed by the researcher and sent to the two expert panels. The educational issues instrument had 40 issues that were to be ranked by the educational expert panel using a five-point Likert-type scale. The participants were asked to indicate how important they thought that each issue was to the future of education. The issues included:

- Academic Standards
- Seamless Educational Systems
- Finance/Budget
- On-line Instruction
- Student Diversity
- Higher Education Access
- Instructional Technology
- Teacher Recognition and Reward
- Classroom and School Facility Size
- Public School Safety
- Educational Leadership
- Social Issues in Education
- Curriculum
- Teacher Education
- Legislative/Policy
- Accountability and High Stakes Testing
- Teacher Recruitment/Retention
- School Buildings and Facilities
- Family/Community Involvement
- School Choice
- Teaching/Instructional Strategies
- Extra-curricular Activities
- Educational Research
- School Organization and Scheduling
- Life Long Learning
- High School Drop Outs
- Industry Connections and Partnerships
- Professional Development and Attitudes
- Teacher Attitude

- High School Tracking and Diplomas
- Classroom Management/Discipline
- Public Perception/Awareness
- Guidance/Counseling
- Equality of Education Provided
- Student Quality/Motivation
- State Leadership
- Role of Public Education and Public Expectations
- Integration of Academic and Career and Technical Education
- Keeping Career and Technical Education Up-To-Date
- Career Pathways

The agricultural issues instrument included 24 issues that were to be ranked by the agricultural expert panel using a five-point Likert-type scale. The participants were asked to indicate how important they thought that each issue was to the future of agriculture. The issues included:

- Farm Bill Implications
- Consumer Impact on Agriculture
- Rural Issues in Agriculture
- Environmental Influence on Agriculture
- Urban Growth/Sprawl Impact on Agriculture
- Youth in Agriculture
- Public Awareness/Understanding in Agriculture
- Transportation's Impact on Agriculture
- Alternative Uses for Agricultural Products
- Animal Welfare Impact on Agriculture
- Water Issues in Agriculture
- Land Issues in Agriculture
- Cooperation and Coordination in Agriculture
- Trade Issues in Agriculture
- Educational Impact on Agriculture
- Research Impact on Agriculture
- Changes in Agribusiness
- External Influences and Impacts on Production Agriculture
- Technology and Innovation in Agriculture
- Food Supply and Safety in Agriculture
- Federal Regulations Impacting Agriculture
- Declining Voice of the Farmer
- Taxes, Estate Planning and Transfer of Assets in Agriculture
- Labor in Agriculture

Two reminders were sent out in the five days following the deadline via electronic mail. This resulted in two more responses from the educational panel of experts and two more responses from the agricultural panel of experts. A total of 22 participants responded from the 32 educational expert panel members and 20 participants responded from the 25 agricultural expert panel members.

In this round, the participants were asked to rate the importance of each issue to education or agriculture respectively. Their responses were averaged to get the mean scores. For the educational issues, the mean scores were as follows:

Table 2

Round Two Mean Scores on Educational Issues

<u>Educational Issues</u>	<u>Mean Scores</u>	<u>Standard Deviation</u>
Teacher Education	4.68	.80
Teacher Recruitment/Retention	4.64	.97
Educational Research	4.27	.77
Classroom Management/Discipline	4.23	.81
Curriculum	4.23	1.02
Finance/Budget	4.18	.97
Professional Development and Attitudes	4.18	.75
Teacher Attitude	4.14	1.10

Table 2 (continued)

Round Two Mean Scores on Educational Issues

Educational Issues	Mean Scores	Standard Deviation
Academic Standards	4.12	.76
Educational Leadership	4.05	.95
Family/Community Involvement	4.05	.76
Public Perception/Awareness	4.05	.79
State Leadership	4.05	.79
Teaching/Instructional Strategies	4.00	.87
Accountability and High Stakes Testing	4.00	1.15
Teacher Recognition and Reward	3.95	.97
Legislative/Policy	3.95	.90
Industry Connections and Partnerships	3.95	.97
Role of Public Education and Public Expectation	3.91	1.02
Social Issues in Education	3.87	.83
Public School Safety	3.86	.99
Life Long Learning	3.86	.94
Seamless Educational Systems	3.82	.96
Student Diversity	3.77	.75
Guidance/Counseling	3.77	.75
Higher Education Access	3.73	.77
Instructional Technology	3.64	.90

Table 2 (continued)

Round Two Mean Scores on Educational Issues

Educational Issues	Mean Scores	Standard Deviation
School Organization and Scheduling	3.55	1.01
Classroom and School Facility Size	3.45	.85
High School Drop Outs	3.45	.95
School Buildings and Facilities	3.36	.73
Equality of Education Provided	3.82	.85
Student Quality/Motivation	3.81	.77
Integration of Academic and Career and Tech. Ed.	3.50	1.54
Keeping Career and Tech. Education Up-To-Date	3.50	1.50
Career Pathways	3.05	1.36
School Choice	3.05	3.04
On-line Instruction	3.04	.90
Extra-curricular Activities	2.95	1.13
High School Tracking and Diplomas	2.91	.97

Note: The mean score was determined by the respondents' ratings on a five point Likert scale with 1 = not important, 2 = somewhat important, 3 = important, 4= very important, 5 = extremely important.

For the agricultural issues, the mean scores were as follows:

Table 3

Round Two Mean Scores on Agricultural Issues

<u>Agricultural Issues</u>	<u>Mean Scores</u>	<u>Standard Deviation</u>
Public Awareness/Understanding in Agriculture	4.34	.82
Trade Issues in Agriculture	4.33	.67
Technology and Innovation in Agriculture	4.32	.48
Food Supply and Safety in Agriculture	4.31	.67
Consumer Impact on Agriculture	4.04	.81
Environmental Influence on Agriculture	4.02	.67
Youth in Agriculture	4.01	1.05
Farm Bill Implications	3.94	.74
Rural Issues in Agriculture	3.94	.88
Water Issues in Agriculture	3.93	1.10
Research Impact on Agriculture	3.91	.88
External Influences and Impacts on Production Ag.	3.83	1.31
Federal Regulations Impacting Agriculture	3.82	1.14
Urban Growth/Sprawl Impact on Agriculture	3.71	.95
Alternative Uses for Agricultural Products	3.71	1.06
Land Issues in Agriculture	3.71	1.06
Changes in Agribusiness	3.70	.88
Labor in Agriculture	3.60	1.07
Educational Impact on Agriculture	3.50	.97

Table 3 (continued)

Round Two Mean Scores on Agricultural Issues

<u>Agricultural Issues</u>	<u>Mean Scores</u>	<u>Standard Deviation</u>
Transportation's Impact on Agriculture	3.42	1.17
Cooperation and Coordination in Agriculture	3.40	1.07
Animal Welfare Impact on Agriculture	3.31	1.79
Declining Voice of the Farmer	3.30	1.42
Taxes, Estate Planning and Transfer of Assets	3.10	1.45

Note: The mean score was determined by the respondents' ratings on a five point Likert scale with 1 = not important, 2 = somewhat important, 3 = important, 4 = very important, 5 = extremely important.

Based on these results, the researcher sought to find a break point in the mean scores where there was a separation in scores. The researcher selected a 3.95 mean score on a five-point scale for the educational issues and a 3.7 mean score on a five-point scale for the agricultural issues as the break point. This resulted in a list of nineteen educational issues and 17 agricultural issues. A few respondents from each panel took the opportunity to offer comments related to association between two or more topics. However these comments primarily related to issues that were below the 3.9 mean score and 3.8 mean score respectively.

These respective lists of issues were used to develop another instrument that was used in round three. In round three, the participants were asked to rate each item on a five-point Likert-scale and to rank the list from one to 19 for the educational group and 17 for the agricultural group.

For round three, the expert panel for education consisted of 22 individuals and the expert panel for agriculture consisted of 20 individuals, who had responded in round two. Respondents were given 10 working days to respond. One follow-up electronic mail reminder was sent to each respondent that had not responded by the deadline. The follow-up reminder resulted in three more educational responses and two more agricultural responses. A total of 15 individuals responded from the educational expert panel and 15 individuals responded from the agricultural expert panel.

The 15 educational expert panel respondents rated and ranked the 19 educational issues surface in round two as follows:

Table 4

Round Three Mean Scores on Educational Issues

<u>Educational Issues</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u>Rank</u>
Finance/Budget	4.64	.50	1
Teacher Recruitment/Retention	4.57	.65	2
Teacher Education	4.42	.51	3
Curriculum	4.28	.73	4
Educational Leadership	4.35	.76	5
Teacher Recognition and Reward	4.29	.64	6
Teaching/Instructional Strategies	4.29	.86	7
Academic Standards	4.21	.58	8
Legislative/Policy	4.14	.74	9
Professional Development	4.14	.86	10
Teacher Attitude	4.14	.95	11

Table 4 (*continued*)*Round Three Mean Scores on Educational Issues*

<u>Educational Issues</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u>Rank</u>
State Leadership	4.07	.72	12
Accountability and High Stakes Testing	3.93	1.09	13
Family/Community Involvement	3.93	.62	14
Classroom Management/Discipline	3.86	.86	16
Public Perception/Awareness	3.86	.86	15
Role of Public Ed. and Public Expect.	3.79	.73	18
Industry Connections and Partnerships	3.79	.83	17
Educational Research	3.64	.80	19

Note: The mean score was determined by the respondents' ratings on a five point Likert scale with 1 = not important, 2 = somewhat important, 3 = important, 4= very important, 5 = extremely important.

Fifteen agricultural expert panel respondents rated and ranked the 17 agricultural issues as follows:

Table 5

Round Three Mean Scores on Agricultural Issues

<u>Agricultural Issues</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u>Rank</u>
Environmental Influence on Agriculture	4.45	.69	1
Technology and Innovation in Ag.	4.27	.65	7
Food Supply and Safety in Agriculture	4.18	.87	2
Trade Issues in Agriculture	4.09	.70	4

Table 5 (continued)

Round Three Mean Scores on Agricultural Issues

<u>Agricultural Issues</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u>Rank</u>
Urban Growth/Sprawl Impact on Ag.	4.00	.98	5
Youth in Agriculture	4.00	.97	8
Farm Bill Implications	3.83	.98	10
Public Awareness/Understanding in Ag.	3.82	1.04	6
Ext. Influences and Impacts on Prod. Ag.	3.82	1.08	3
Consumer Impact on Agriculture	3.73	.79	9
Water Issues in Agriculture	3.73	.79	12
Federal Regulations Impacting Ag.	3.73	.79	14
Rural Issues and Agriculture	3.64	.92	11
Research Impact on Agriculture	3.45	.52	16
Changes in Agribusiness	3.45	1.13	13
Alternative Uses for Ag. Products	3.36	.67	17
Land Issues in Agriculture	3.36	.92	15

Note: The mean score was determined by the respondents' ratings on a five point Likert scale with 1 = not important, 2 = somewhat important, 3 = important, 4 = very important, 5 = extremely important.

Based on these results, the researcher sought to find a break point in the mean scores where a significant separation in scores occurred. The researcher selected a 4.0 mean score on a five-point scale for the educational issues and a 4.0 mean score on a five-point scale for the agricultural issues as the break point. This resulted in a list of

twelve priority educational issues and six priority agricultural issues. A few respondents from each panel took the opportunity to offer comments related to association between two or more topics. However these comments related primarily to similarities of issues that were below the 4.0 mean score and 4.0 mean score respectively.

The participants were asked to rank the issues in round three as well. The rankings provided the researcher with a priority list of the issues per the opinion of each expert panel. The ranking that each participant gave for each item was added together. This sum was divided by the number of respondents and an average score resulted. The lower the average score, the higher the rank.

In education, there was agreement between the top educational issues per the Likert-scale rating and the overall ranking. In agriculture, there was difference in the rating and the ranking of the top six issues. Technology and Innovation in Agriculture rated second, but was ranked seventh while Youth in agriculture rated sixth, but was ranked eighth. It is also noteworthy to share that Public Awareness and Impacts on Agriculture ranked sixth and third respectively, but did not rate in the top six.

The resulting twelve priority issues in education were:

Table 6

Priority List of Educational Issues

Educational Issues	Mean Score	Standard Deviation	Rank
Finance/Budget	4.64	.50	1
Teacher Recruitment/Retention	4.57	.65	2
Teacher Education	4.42	.51	3
Curriculum	4.28	.73	4

Table 6 (*continued*)

Priority List of Educational Issues

<u>Educational Issues</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u>Rank</u>
Educational Leadership	4.35	.76	5
Teacher Recognition and Reward	4.29	.64	6
Teaching/Instructional Strategies	4.29	.86	7
Standards	4.21	.58	8
Legislative/Policy	4.14	.74	9
Professional Development	4.14	.86	10
Teacher Attitude	4.14	.95	11
State Leadership	4.07	.72	12

Note: The mean score was determined by the respondents' ratings on a five point Likert scale with 1 = not important, 2 = somewhat important, 3 = important, 4= very important, 5 = extremely important.

The resulting six priority issues in agriculture were:

Table 7

Priority List of Agricultural Issues

Agricultural Issues	Mean Score	Standard Deviation	Rank
Environmental Influence on Agriculture	4.45	.69	1
Technology and Innovation in Ag.	4.27	.65	7
Food Supply and Safety in Agriculture	4.18	.87	2
Trade Issues in Agriculture	4.09	.70	4
Youth in Agriculture	4.00	.97	8
Urban Growth/Sprawl Impact on Ag.	4.00	.98	5

Note: The mean score was determined by the respondents' ratings on a five point Likert scale with 1 = not important, 2 = somewhat important, 3 = important, 4= very important, 5 = extremely important.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

5.1 Summary

The purpose of this study was to identify the trends and issues in education and agriculture by using the Delphi research process and develop recommendations for the consideration of the profession based on the findings. Hopefully, these recommendations will be useful to national and state agricultural education program leaders as they chart the future course of the agricultural education program. This research topic was selected because the researcher found that there was a need for this type of research at the national and state level. In particular, the researcher found this to be true in work related to national and state governing boards in agricultural education.

The research methodology used by the researcher was the Delphi technique. This technique was originally created by a team of researchers working for the Rand Corporation as a means of developing consensus on various national defense issues. The Delphi technique utilizes a series of three rounds of surveys conducted with a panel of experts. The panel must have an expert knowledge and understanding of the issue or issues being studied. The identification and selection of the expert panel is critically important and must be done with very carefully.

The first round identified the significant trends related to the study that is being conducted. The second round utilized an instrument that was created by the researcher from the first round feedback. The round-two instrument used a five-point, Likert-type rating scale. After round two, the researcher created a third round instrument based on the

responses he had received from round two. To develop the round-three instrument, the researcher narrowed the list of issues and trends based on the ratings and rankings that the respondents provide in their responses. In round three the researcher uses a Likert-type rating scale and a ranking. The researcher narrowed the list of priority issues and trends that were provided by the respondents. During each round, researcher narrowed the list of issues and trends. This required careful review of the issues based on mean scores and rankings. The desired result for the researcher was to have the expert panel reach a consensus decision on the priority issues.

For this study, the researcher did a national solicitation for nominations to identify the experts in education and agriculture. This nomination process was conducted with national agricultural education leaders, state agricultural education leaders, university agricultural educators and agriculture teachers. The call for nominations was sent to 1,160 individuals via email. The nominators were asked to provide name, title, address, telephone, facsimile, electronic mail address and a brief biographical description. Two requests were conducted to assure that a large number of nominees were identified. One hundred and forty-two experts were identified from the nomination process. Seventy-two of those were in education and 70 were in agriculture. This group was narrowed to two panels of 50 experts in education and 50 experts in agriculture. The selection of the panelists was based on types of work, types of educational background, geographic location, gender, ethnicity and experiences. A letter and a round-one survey instrument were sent to each panelist. The instrument was customized for the specific expertise panel thereby guiding the educational experts to provide educational trend feedback and the agricultural experts to provide agricultural trend feedback. Each expert was asked to

confirm that they would serve on the panel and to identify up to 10 educational or agricultural issues respectively. This resulted in positive responses from 32 educational experts and 25 agricultural experts. The respondents identified 40 educational issues and 24 agricultural issues.

These issues were formatted into two instruments, one for education and one for agriculture. These two instruments asked the experts to rate each item on a five-point Likert scale in round two. Round two resulted in 22 educational expert panelists responding and 20 agricultural expert panelists responding. Their ratings resulted in 19 educational issues and 17 agricultural issues.

These issues were formatted into two instruments, one for education and one for agriculture. These two instruments asked the experts to rate each item on a five-point Likert scale and to rank the items in round three. Round three resulted in 15 educational expert panelists responding and 15 agricultural expert panelists responding. Their ratings resulted in twelve educational issues and six agricultural issues.

5.2 Conclusions

Based on the finding of this study, the following conclusions were drawn:

1. Agricultural issues are global in nature and are connected to international trade, public policy, food supply, agricultural awareness, urban growth, and the environment. These themes overlap in many ways and make the future of agriculture difficult and challenging.
2. Education issues are linked to public policy, leadership, training and finance. These three areas appear to be overlapping in their nature since they are either caused and or the result of another issue. At the center of most of the issues is the

number one issue of finance and budget. This has been a challenge in the past and will probably continue to be in the future.

5.3 Implications

The results of this study provide some clear signals for state and national agricultural education leaders as they chart the future direction of the agricultural education program. Failure to recognize the signals and to adjust course would be detrimental to the program. As Hunt (2000) stated, “ We must decide together to shape our common future.” The opportunity to shape the future is in the hands of today’s program leaders.

First, efforts must be made to ensure that the agricultural education program is positioned to address education’s trends and issues. The twelve highest priority issues surfaced by educational experts were: finance and budget, teacher recruitment and retention, teacher education, curriculum, educational leadership, teacher recognition and reward, teaching and instructional strategies, standards, legislation and policy, professional development, teacher attitude, and state leadership.

Finance and budget are clearly the primary concerns of leading educators in the United States. Finance and budget are not new issues, but are increasingly important. With the inequity of funding that is occurring from school to school based on local taxation, a large segment of our students, especially in rural areas are not getting the highest quality of education (Bowles, 2000). Furthermore, with a growing student population base, a demand for higher teacher salaries and the trend of greater school choice through the use of vouchers, this issue is not likely to go away. A final complication to the finance and budget issue for agricultural education is the focus on

academic standards and testing. Chances are that a great funding emphasis will be focused in that direction thereby reducing the funding for career and technical education programs like agricultural education.

Teacher recruitment and retention is a priority issue in education today. This issue has been of concern and although much has been done to increase teacher salaries in many parts of the nation, the issue remains. A significant part of this problem is found in the way teachers are treated. As Brown (2003) indicated there has been a great focus and concern over the years regarding student drop out. However, there is an equal or not greater concern regarding teacher drop out's. According to Camp (2002), agricultural education programs nationwide are continuing to have a shortfall in the number of fully qualified teachers prepared to accept available teaching positions. With a growing student population and higher expectations of the education system, finding and keeping qualified teachers is essential. Agricultural education must focus great energy in this arena if it is to remain viable. With increased pressure on university teacher education programs to prepare teachers for academic areas, the profession must continue to make the case for the value that the agricultural education program has in the local school.

Teacher education was surfaced as high priority by the expert panel. This was interesting in light of an earlier study by Connors (1998) that indicated that agriculture teachers and state supervisors saw this as a problem while university educators did not. One could say that the university faculty are not in tune with where the field is. However, this could point to a different concern. Perhaps the expectations that universities are placing on faculty and the tight budgetary times are forcing faculty to make choices that are not recognized by teachers and state supervisors. Regardless of an

individual opinion, teacher education is positioned in the center of the educational debate. All of the many educational issues including, but not limited to, recruitment, retention, standards, accountability, high stakes teaching, and reaching diverse audiences intersect in teacher education programs. Preparing students in a manner that not only makes them good teachers, but also good managers of change, is vital. Education is turbulent and dynamic. Successful teachers must be prepared to deal with a challenging, ever-changing environment. Agricultural education must have a well-prepared teaching force if it is to thrive in the future.

Not surprisingly, curriculum continues to be a central issue for education. Curriculum, what should be taught, was being debated at the beginning of the 20th century and it is today at the beginning of the 21st century. In the early 1900's there was a push for more curricular rigor and ways for measuring school results. In 2003 there is a push for more curricular rigor and ways for measuring school results. Obviously, it is not a new debate, but it is one that has attention from the federal level with the No Child Left Behind Legislation to the local public school door with a greater emphasis on quality teaching and accountability. Agricultural education must make sure that its curriculum is current and viable. It should also take steps to make sure that the agricultural education program is an integral part of the total school's success. Building these types of partnerships will not only strengthen curriculum and teaching, but it will also strengthen the case and need for agricultural education programs.

Educational leadership is an issue that is of significant importance to the future of education. This issue tends to overlay with several others. Educational leaders must recruit, hire and retain quality teachers. Educational leaders must find ways to address

budgetary issues. Educational leaders must assure that good curriculum is being taught and provide leadership and support to teachers to make sure that this is occurring. The agricultural education profession should make efforts to help teachers deal effectively with administrators and work to assure that educational leaders know and understand the value of an agricultural education program.

Teacher recognition and reward is an issue that will continue to be of concern in the future. Teacher salaries have made a considerable leap in recent years (Home School Legal Defense Association, 2002a). However, there continues to be concern in the area for not only appropriate compensation for teachers, but also their treatment as professionals. Teachers should not be viewed as hired help according to former North Carolina Governor Jim Hunt (Brown, 2003). This issue has serious implications for the agricultural education program's future as efforts are made to recruit and retain agriculture teachers. A highly motivated, well-trained agriculture teaching profession is a necessity for agricultural education to grow in the future. This issue has serious implications for the total educational establishment.

Effective teaching and instructional strategies are an issue for the future of education. Quality teaching is critical in today's world of high stakes testing and accountability. Parents and policy-makers are expressing concern for the performance of students in core academic areas. One of the pillars of the No Child Left Behind Legislation is identification of proven strategies for increasing student participation (United States Department of Education, 2003). Agricultural education leaders must carefully monitor these developments and find ways of increasing teacher performance to enhance student learning and to be supportive of the academic goals in the areas of

reading, writing, and math.

Standards were an issue at the beginning of the 1900's and they continue to be a high priority today. Reeves (2000) reported that Dewey was advocating many of the same themes in his day that are being promoted today. Standards in the academic areas in reality are goals or benchmarks that a school must attain to be perceived and promoted as a quality school. The question for the agricultural education profession is, how can agricultural education be a part of the solution? This issue should be addressed on a national, state and local to assure that agricultural education has relevance in today's school environment.

Education has historically been a very political issue. That is not predicted to change over the next few years according to educational experts. Legislation at the federal and state level has influence and impact on the focus and direction instruction in the school. Legislation and policy tend to point out what will be measured in the school. It is important for agricultural education leaders to recognize that whatever gets measured will get done and if the agricultural education program survives in the future it will rely in large part to being measured as an essential component of the school. Political activity on the part of the agricultural education program's leadership is vital and must be a part of the future for the program.

Professional development has been identified as a priority issue for the future of education. Assuring that teachers are up-to-date on the latest content and teaching technology is essential. The North Central Regional Educational Laboratory (2002) reported that quality and technology are essential for educational success. Teachers must be well prepared to serve today's students and to have the opportunity to address today's

educational goals. Professional development for agriculture teachers is essential to the future of the agricultural education program. At today's rate of rapid rate of change, quality professional development is vital.

Teacher attitude was perceived by educational experts to be a high priority in the future. Teacher attitude refers to the enthusiasm and excitement that a teacher has about their profession. The attitude of a teacher could be influenced by external factors like salary or working conditions. Agricultural education leaders need to be sensitive to this issue as they make plans for future professional development activities. Teachers need to be encouraged and recognized by leaders in the agricultural education program to improve teacher attitude.

State leadership was identified as a key issue for the future. Most states have lost state leadership positions over the past decade. This has reduced the support that teachers receive for professional development and curriculum support. Agricultural education has experienced different situations in different states. In some states there are less than one full-time position in a state for agricultural education and in other states there have been state leadership added for the agricultural education program. State leadership typically drives the development of professional development and curriculum products. The need for state leadership will continue to be a major concern for agricultural education leaders.

Second, efforts must be made to ensure that the agricultural education program is positioned to address agriculture's trends and issues. The six highest priority issues surfaced by agricultural experts were environmental influences, technology and innovation, food supply and safety, trade issues, youth in agriculture, and urban growth/sprawl.

The environment is a major issue in agriculture. This issue deals with water, air, soil and other factors that have an impact on natural resources and quality of life. As agriculture meets these challenges through the use of biotechnology and the use of improving farming practices, agricultural education needs to assure that its instructional program and professional development activities are aligned with the moves of the industry. Agricultural education can play a major role in the education of the public in regards to these issues if its leaders choose to focus in this arena.

Technology has had a dramatic impact on agriculture over the past sector. From having a farmer feed less than 10 people to over 130 is a significant leap forward that is a result of technological advances. These changes have been so rapid in agriculture that often it is difficult for the agricultural education to keep pace. This is a real challenge and issue for the agricultural education profession. Professional development and continuing education for agriculture teachers is vital for agricultural education's future.

Food Supply and Safety is a significant issue for the future of agriculture. The impact of biotechnology is certainly being felt here. If the world is to be fed over the next 50 years, biotechnology will be a significant player. Agricultural education can play a major role in the future of promoting and educating the public in this important area. Although controversial, this issue is a reality and one that requires agricultural education to be proactive and involved. The students of agricultural education must be informed about food issues so that they cannot only be good producers, but also good consumers.

Agricultural experts indicated that trade issues were a high priority in agriculture. With farm income decreasing and commodity prices at a 40 year low, it is imperative that trade agreements and their long-term impact on the agricultural economy be carefully

monitored. Trade issues should be an integral part of agricultural education's curriculum and professional development efforts. Agriculture is more global than ever before and if agricultural education is to successfully compete in the world economy, students and teachers must have a solid grounding in agricultural trade issues.

Agricultural experts indicated that youth in agriculture was a significant issue. This should be viewed as a positive sign for the agricultural education community since it indicates that there is a need for more youth to pursue involvement in agriculture. Agricultural education has taken pride in the idea that is provided students for the work in the agricultural industry. The fact that agricultural experts see this as a need area indicates that there is a high need for what agricultural education does. Agricultural education should remain loyal to its agricultural base and continue to focus on preparation of students for agricultural careers.

Urban growth and sprawl has become a significant issue for agriculture in the past few years. In 1971, the United States Department of Agriculture forecasted that this would be an issue by the turn of the century, and they were right. With a growing population that is driven heavily by an increasing Hispanic population, the United States finds its cities and towns taking up more and more agricultural land. This has not had an impact on agricultural production, but also on the quality of life as the environment is impacted. Agricultural education can have a role in the working with future agricultural leaders and agriculture teachers to better understand these issues and become involved in the process. The dividing line between urban and rural America is disappearing and both segments of society must work together to resolve this critical issue.

When one looks broadly at the findings of this study, a case can be made for state

and national agricultural education leaders to focus more energy and time on scanning the educational and agricultural environments. Understanding the critical issues facing education and agriculture, and being able to see where the trends are heading is vital to the future success of agricultural education. Agricultural education should position itself in a proactive, not a reactive position to be prepared to meet the challenges ahead.

5.4 Recommendations

Based on the findings, conclusions and implications of this study, the following recommendations are offered:

1. One or more of the national organizations in agricultural education should create an educational process for monitoring and keep national and state leaders updated on emerging agricultural and educational issues. Organizations that might consider this would include: National Council for Agricultural Education, National Association for Agricultural Educators or National FFA Organization.
2. One or all of the national organizations in agricultural education should develop a system for gathering data for forecasting trends and issues in agricultural education. This system could be a joint venture between several of the organizations. The system should be institutionalized so that there would be a three to five year report of issues and trends and discussion about the implications that those issues and trends might have on agricultural education.
3. Agricultural education and the national and state levels develop systems for influencing public policy in education and agriculture. These systems should operate cooperatively and should involve partnerships and alliances with other significant organizations. This should not be a long-range goal of the program,

- but rather immediate actions should be taken to make this action a reality.
4. Agricultural education curriculum and professional development activities for agriculture teachers at the state and national levels should focus on emerging issues and trends. Agriculture teachers must be up-to-date on the issues that are on the horizons in education and agriculture.
 5. University teacher education faculty should seek opportunities to engage students in learning opportunities and discussions regarding the emerging issues and trends in education and agriculture. These learning experiences should be an integral part of the student's teacher education experience.
 6. Research should be conducted by the agricultural education profession on the priority issues that have been identified in this study. Educational issues, such as, finance and budget, teacher recruitment and retention, and teacher education deserve continued research efforts. Agricultural issues, such as, environmental impact, food supply and safety, and international trade need further research as future curriculum and professional development efforts are developed.
 7. Agricultural education curriculum leaders should provide direction for the development of curriculum materials and professional development activities on the nine agricultural issues identified as priorities in this study. More emphasis should be focused on environmental issues, agricultural technology, food safety, international trade and urban/rural relationship issues.

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APPENDIX A
NOMINATION FORM

Emerging Issues and Trends in Education and Agriculture
Expert Panelists Nominees

Educational Leader Nominees	Agricultural Leader Nominees
#1 Name: Title: Organization: Address: City: State: Zip: Business Telephone: Business Fax: Email Address: Brief Description:	#1 Name: Title: Organization: Address: City: State: Zip: Business Telephone: Business Fax: Email Address: Brief Description:
#2 Name: Title: Organization: Address: City: State: Zip: Business Telephone: Business Fax: Email Address: Brief Description:	#2 Name: Title: Organization: Address: City: State: Zip: Business Telephone: Business Fax: Email Address: Brief Description:
#3 Name: Title: Organization: Address: City: State: Zip: Business Telephone: Business Fax: Email Address: Brief Description:	#3 Name: Title: Organization: Address: City: State: Zip: Business Telephone: Business Fax: Email Address: Brief Description:

APPENDIX B

ROUND ONE AGRICULTURAL ISSUES INSTRUMENT

Emerging Issues in Agriculture

Thank you for taking time from your busy schedule to complete this survey. You are being asked to identify **up to ten** (in no specific order) of the most important issues facing **agriculture** in the future. Responses may be typed or hand written. Your responses are due by **October 21, 2002**. You may submit your response by mail, fax or email by using the following contact information:

**Marshall Stewart, State Agricultural Education Coordinator, NC State University,
Box 7607, Raleigh, North Carolina, 27695
919.515.1681 (telephone)/919.515.9060 (fax)/marshall_stewart@ncsu.edu**

If you do not wish to participate in this study, please check the appropriate answer and return the survey. ____ **Yes, I will participate** ____ **No, I will not be participating**

In the space provided, please identify and briefly describe **up to ten** (in no specific order) of the most important issues facing agriculture in the future.

#1
#2
#3
#4
#5
#6
#7

#8
#9
#10

Please indicate your preferred method of communication (check one): ☐ email ☐ fax
☐ mail

What email address, fax number or mailing address do you prefer?

Email Address:

Fax:

Mailing Address:

APPENDIX C

ROUND ONE EDUCATIONAL ISSUES INSTRUMENT

**Survey
Emerging Issues in Education**

Thank you for taking time from your busy schedule to complete this survey. You are being asked to identify **up to ten** (in no specific order) of the most important issues facing **education** in the future. Responses may be typed or hand written. Your responses are due by **October 21, 2002**. You may submit your response by mail, fax or email by using the following contact information:

**Marshall Stewart, State Agricultural Education Coordinator, NC State University,
Box 7607, Raleigh, North Carolina, 27695
919.515.1681 (telephone)/919.515.9060 (fax)/marshall_stewart@ncsu.edu**

If you do not wish to participate in this study, please check the appropriate answer and return the survey. ____ **Yes, I will participate** ____ **No, I will not be participating**

In the space provided, please identify and briefly describe **up to ten** (in no specific order) of the most important issues facing education in the future.

#1
#2
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#5
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#7

#8
#9
#10

Please indicate your preferred method of communication (check one): ☐ email ☐ fax
☐ mail

What email address, fax number or mailing address do you prefer?

Email Address:

Fax:

Mailing Address:

APPENDIX D

ROUND TWO EDUCATIONAL ISSUES INSTRUMENT

**Survey
Educational Trends and Issues
Round 2**

Welcome to Round Two! In Round One, a panel of educational experts from across the nation identified a total of 264 emerging trends and issues. These trends and issues have been compiled into a group of forty key trend and issue statements. Each statement has a brief description that includes key words that were surfaced during round one.

A Likert-type scale (1 to 5) is available for you to use in rating the importance of that particular issue in regards to the future of education. There is also space provided for you to offer additional comments if you believe that more information or detail is needed. You will also notice that at the end of the instrument there is space provided for you to share additional thoughts that you think may have been missed in round one.

Please rate each issue from 1 to 5 as follows: **1 = not important; 2 = somewhat important; 3 = important; 4 = very important; 5 = extremely important.** For each issue, please feel free to share any thoughts you have for improving or enhancing the issue's description. Also, at the end of the instrument you will find space provided for you to share any areas that you think we may have missed in round one.

After you have completed the survey, you may respond to me via email or fax (919.515.9060) or mail (Marshall Stewart, NCSU, Box 7607, Raleigh, NC 27695). You should receive round three (final round) within the next couple of weeks. I am requesting that you return your survey to me by **February 7, 2003**. Thank you for taking time to complete this survey.

Issue 1 – Standards

1 2 3 4 5

Standards includes the heavy emphasis on academic achievement, the disagreements in the education community regarding what standards should look like, alignment of career and technical education with standards and maintaining high quality standards while providing flexibility to address local needs.

Comments:

Issue 2 – Seamless

1 2 3 4 5

Seamless includes the development of seamless education between secondary and post secondary education, interfacing levels and types (formal and non-formal) of education and articulation agreements.

Comments:

Issue 3 – Finance/Budget**1 2 3 4 5**

Finance/Budget includes basic education funding, scarce public financial resources to support education, property tax vs. state and federal funding scenarios, equity of funding between schools, and funding school facilities improvements, curriculum development, programs and salaries.

Comments:

Issue 4 – On-line Instruction**1 2 3 4 5**

On-line Instruction includes the appropriateness of this type of instruction for various settings, effective use of this medium, the need for quality web-based curriculum and instructional materials and the long-term impact of this educational delivery system.

Comments:

Issue 5 – Student Diversity**1 2 3 4 5**

Student Diversity includes the ability of teacher to reach ethnically, economically and socially diverse students, developing instructional strategies to deal with the large numbers of LEP (limited English proficiency) students, recognizing and adapting to the changing demographics of learners, embracing diversity and globalization while sustaining cardinal principals and purposes of democratic schools, matching teaching techniques to learning styles and overcoming the “one-size-fits-all/cookie cutter approach” to educating everyone.

Comments:

Issue 6 – Higher Education Access**1 2 3 4 5**

Higher Education Access includes the student selective process for college entry, increasing entry requirement, recognition of career and technical education as meaningful for college entry, increasing costs of high education and the opportunity for rural students to get into a land grant institution.

Comments:

Issue 7 – Instructional Technology**1 2 3 4 5**

Instructional Technology includes the appropriate use of technology in teaching, providing access to the internet while protecting civil and personal liberties, balancing traditional and new teaching techniques and assuring that all teachers and students have modern technology in their classroom.

Comments:**Issue 8 – Teacher Recognition and Reward****1 2 3 4 5**

Teacher Recognition and Reward includes paying competitive salaries to qualified teachers, improving the status and quality of life for skilled teachers, creating incentives to rewards excellent teaching and raising the salaries of all educators.

Comments:**Issue 9 – Classroom and School Facility Size****1 2 3 4 5**

Classroom and School Facility Size includes lowering class size (18 to 24 students per class), managing teaching loads, increasing individualized instruction and creating smaller schools.

Comments:**Issue 10 – Safety****1 2 3 4 5**

Safety in Education includes reducing violence, increasing school security and ensuring that every school is a safe environment.

Comments:

Issue 11 – Educational Leadership**1 2 3 4 5**

Educational Leadership includes recruiting qualified people to run for school boards, ensuring that elected leaders understand all facets of education, addressing the principal shortage and balancing governance roles and authority among local, state and federal entities.

Comments:**Issue 12 – Social Issues in Education****1 2 3 4 5**

Social Issues in Education includes social problems of students, drug use, teen pregnancy, teen crime, broken homes, crime, terrorism, increased student challenges outside of school, high speed life style of society, increasing social demands that dilute and/or detract from the educational mission of schools.

Comments:**Issue 13 – Curriculum****1 2 3 4 5**

Curriculum includes the updating of outdated curriculum, identifying what students need to know, the appropriate selection and use of curriculum, infusing international aspects, infusing more science and technology, integration of subject matter, increasing academic rigor and managing the volume of new information that is being created.

Comments:**Issue 14 – Teacher Education****1 2 3 4 5**

Teacher Preparation includes making sure that universities are not out of touch with real world of education, funding and sustaining teacher education programs, identifying and replicating best teacher education practices and providing quality certification programs

Comments:

Issue 15 – Legislative/Policy**1 2 3 4 5**

Legislative/Policy includes implementation of state and federal mandates, coping with the volatility of politics, No Child Left Behind Act, Perkins Act, quick fix reactions instead of systemic and long-term improvements and the legislation regulating the privatization of public schools.

Comments:

Issue 16 – Accountability and High Stakes Testing**1 2 3 4 5**

Accountability includes the development of instructional strategies to improve student performance at the middle and high school levels, intervention strategies for low performing schools, high school exit exams, standards for accountability, authentic assessment, closing the achievement gap between various groups, the impact of accountability on elective courses, impact of No Child Left Behind, negative impacts on teaching and loss of childhood due to over-emphasis on testing.

Comments:

Issue 17 – Teacher Recruitment/Retention**1 2 3 4 5**

Teacher Recruitment/Retention includes discussion of the teacher shortage, credentialed teachers and teacher availability/competence. Includes the availability of teachers who teacher students rather than teach content, keeping quality personnel in teaching roles, teachers as roles for values and morals, willingness of teachers to change, finding qualified and credentialed teachers, teacher professionalism, impact of alternative certification teacher certification, teacher licensure differences and inconsistencies and the significant loss of master teachers during the next few years to retirement.

Comments:

Issue 18 – Facilities**1 2 3 4 5**

Facilities includes construction of facilities to train for a workforce that will be in place for 40 to 50 years beyond now, adequacy of buildings and equipment, modifying and modernizing learning environments and assuring safe, accessible and quality facilities.

Comments:

Issue 19 – Family/Community Involvement**1 2 3 4 5**

Family/Community Involvement includes the lack of external involvement in schools today, parental support of students, parental trust in school systems, need for improved parenting skills, changing the “college bound only” mentality of many parents and community citizens.

Comments:**Issue 20 – School Choice****1 2 3 4 5**

School Choice included vouchers, open enrollment, home schooling, charter schools, impact of voucher on public school financing, school privatization and competition with private schools.

Comments:**Issue 21 – Teaching/Instructional Strategies****1 2 3 4 5**

Teaching/Instructional Strategies includes the development of Individualized learning plans for all students, determining the best delivery methods, moving to a learner-centered teaching approach, problem-based learning and reaching bored, unmotivated students.

Comments:**Issue 22 – Extra-curricular Activities****1 2 3 4 5**

Extra-curricular Activities includes determining the role that these activities should have in the educational setting and managing the emphasis on athletics.

Comments:

Issue 23 – Educational Research**1 2 3 4 5**

Educational Research includes the continuing investment and priority on educational research, sharing of educational research findings with teachers and leveraging the investment in research for improving student achievement.

Comments:

Issue 24 – School Organization**1 2 3 4 5**

School Organization includes the re-thinking of how courses are scheduled, the Kindergarten through grade twelve model and the organizing of schools to respond to cross-disciplinary problems and concerns.

Comments:

Issue 25 – Life Long Learning**1 2 3 4 5**

Life-long learning includes instilling in students the desire to learn for a lifetime.

Comments:

Issue 26 – Drop Outs**1 2 3 4 5**

Drop Outs includes addressing the issue of students dropping out of high school before graduation.

Comments:

Issue 27 – Industry Connection**1 2 3 4 5**

Industry Connection includes the need for more collaborations and partnerships with industry and addressing the concerns of educators regarding interference in schools from the business community.

Comments:

Issue 28 – Professional Development and Attitudes**1 2 3 4 5**

Professional Development and Attitudes includes the need for teachers to be technically update-to-date in the subject area and to provide quality training opportunities.

Comments:

Issue 29 – Teacher Attitude**1 2 3 4 5**

Teacher Attitude includes the issues of teacher morale and enthusiasm for their profession.

Comments:

Issue 30 – Diplomas**1 2 3 4 5**

Diplomas include the issues surround different high school diploma tracks that exist and diploma tracking systems.

Comments:

Issue 31 – Classroom Management/Discipline**1 2 3 4 5**

Classroom Management and Discipline includes those issues related to the teacher and school administration's ability to provide a positive learning environment.

Comments:

Issue 32 – Public Perception/Awareness**1 2 3 4 5**

Public Perception/Awareness includes the need to improve the image of the public schools, to have public relations efforts, to enhance the image of teaching, to increase the public support of schools and to change the mind-set that every student must get a four-year college degree.

Comments:

Issue 33 – Guidance/Counseling**1 2 3 4 5**

Guidance and Counseling includes those issues related to advising public school students in the course choices, career development, addressing social issues that arise in the school setting and lowering the pupil ratio for each guidance counselor.

Comments:

Issue 34 – Equality of Education Provided**1 2 3 4 5**

Equality of Education Provided includes ensuring that are no differences from one public school to another public school to guarantee that all children have equal access to high quality public school education.

Comments:

Issue 35 – Student Quality/Motivation**1 2 3 4 5**

Student Quality/Motivation includes improving the commitment and dedication that students have for their education and improving the quality/readiness of students as they move to post-secondary or career opportunities after high school.

Comments:

Issue 36 – State Leadership**1 2 3 4 5**

State Leadership includes the negative impact that downsizing in state departments of education have had on schools and the resulting lack of technical assistance for teachers.

Comments:

Issue 37 - Role of Public Education**1 2 3 4 5**

Role of Public Education includes a detailed review of the purposes (a definition) of public education and what the public does and should expect from the public schools.

Comments:

Issue 38 – Integration of Academic and Career and Tech. Education 1 2 3 4 5

Integration of Academic and Career and Technical Education includes the relationship between that does and/or should exist between these two educational arenas. This also includes the on-going debate that continues regarding whether or not these two areas are or should be separate and how they should support one another. It also relates to the issue of academic rigor in career and technical education.

Comments:

Issue 39 – Keeping Career and Technical Education Up-To-Date 1 2 3 4 5

Keeping Career and Technical Education Up-To-Date is focused on the on-going challenge that exists in career and technical education to assure that the educational programs are current with the industry that they serve.

Comments:

Issue 40 – Career Pathways**1 2 3 4 5**

Career Pathways focuses on the approaches being taken in many parts of the nation to establish pathways or clusters for students to focus on at the high school level in preparation for a career major.

Comments:

Now that you have completed the round two, if you have any other educational trends and issues that you think we have missed, please list them below. Also, if you believe some of the existing issues should be combined, please indicate that in the space provided.

Trends and Issues in Education

APPENDIX E

ROUND TWO AGRICULTURAL ISSUES INSTRUMENT

**Survey
Agricultural Trends and Issues
Round 2**

Welcome to Round Two! In Round One, a panel of agricultural experts from across the nation identified a total of 180 emerging trends and issues. These trends and issues have been compiled into a group of twenty-four key trend and issue statements. Each statement has a brief description that includes key words that were surfaced during round one.

A Likert-type scale (1 to 5) is available for you to use in rating the importance of that particular issue in regards to the future of agriculture. There is also space provided for you to offer additional comments if you believe that more information or detail is needed. You will also notice that at the end of the instrument there is space provided for you to share additional thoughts that you think may have been missed in round one.

Please rate each issue from 1 to 5 as follows: **1 = not important; 2 = somewhat important; 3 = important; 4 = very important; 5 = extremely important.** For each issue, please feel free to share any thoughts you have for improving or enhancing the issue's description. Also, at the end of the instrument you will find space provided for you to share any areas that you think we may have missed in round one.

After you have completed the survey, you may respond to me via email or fax (919.515.9060) or mail (Marshall Stewart, NCSU, Box 7607, Raleigh, NC 27695). You should receive round three (final round) in a few weeks. I am requesting that you return your survey to me by **December 20, 2002**. Thank you for taking time to complete this survey.

Issue 1 – Farm Bill Implications

1 2 3 4 5

Farm Bill Implications includes issues related to the changes in and implementation of the Farm Bill and its impact on farmers, ranchers and agribusiness.

Comments:

Issue 2 – Consumer Impact on Agriculture

1 2 3 4 5

Consumer Impact on Agriculture includes the preferences of customers, value-added, convenience, ready-to-eat, portion control, costs, taste and nutrition.

Comments:

Issue 3 – Rural Issues and Agriculture**1 2 3 4 5**

Rural Issues and Agriculture includes the social and societal issue of the rural areas, transfer of assets to the next generation, estate planning, development of employment opportunities as supplemental income to producers, health in rural areas, recreational and interaction opportunities.

Comments:

Issue 4 – Environmental Influence on Agriculture**1 2 3 4 5**

Environmental Influence on Agriculture includes protection of endangered species, water quality, nutrient management, animal waste, the impact of high production agriculture, regulation compliance and restrictions, stewardship of natural resources and land use conflicts.

Comments:

Issue 5 – Urban Growth/Sprawl Impact on Agriculture**1 2 3 4 5**

Urban Growth/Sprawl Impact on Agriculture includes encroachment, conflicts, odor, smoke, dust, noise, coordination of planning, restrictions on development, loss of productive farmland and farmland conversion.

Comments:

Issue 6 – Youth in Agriculture**1 2 3 4 5**

Youth in Agriculture includes retention of youth in agriculture, making it financially possible for youth to farm, increasing the interest that students have in agricultural careers, assuring farm youth that they can continue in production agriculture, helping youth interested in production agriculture get started and identifying and training farm and rural leadership.

Comments:

Issue 7 – Public Awareness/Understanding in Agriculture**1 2 3 4 5**

Public Awareness/Understanding in Agriculture includes agricultural literacy, global acceptance of new food technology in biotechnology and genetic engineering, community acceptance of agriculture as a neighbor, positioning agriculture as an economic growth area, changing the provincial view of agriculture in cities and among educators, consumer acceptance of GMO's and irradiation, improving consumer confidence, understanding of need for crop protection tools and updating consumers on what agriculture is, what it does and how it works.

Comments:

Issue 8 – Transportation's Impact on Agriculture**1 2 3 4 5**

Transportation's Impact on Agriculture includes expanding, rebuilding, improving to regain our competitive edge in the United States and around the world.

Comments:

Issue 9 – Alternative Uses for Agricultural Products**1 2 3 4 5**

Alternative Uses for Agricultural Products includes increasing the use of alternative fuels, positioning agriculture as a primary source of energy (alcohol) and feed stocks (corn fibers), systems farming (hunting, agri-tourism), use of agricultural products for disease control and prevention and renewable fuels usage with mainstream consumers.

Comments:

Issue 10 – Animal Welfare Impact on Agriculture**1 2 3 4 5**

Animal Welfare Impact on Agriculture includes issues surfaced by animal rights groups and activists concerned about the consumption of meat and the treatment of animals being raised for agricultural purposes.

Comments:

Issue 11 – Water Issues in Agriculture**1 2 3 4 5**

Water Issues in Agriculture includes the availability and access of potable water for use in agricultural enterprises and rural communities.

Comments:

Issue 12 – Land Issues in Agriculture**1 2 3 4 5**

Land Issues in Agriculture includes the availability and protection of productive farmland and green spaces as a part of the agricultural economy and environment.

Comments:

Issue 13 – Coordination in Agriculture**1 2 3 4 5**

Cooperation and Coordination in Agriculture includes the need for focused goals in the agricultural community and cooperation between various agricultural commodity organizations at the state and national level.

Comments:

Issue 14 – Trade Issues in Agriculture**1 2 3 4 5**

Trade Issues in Agriculture include increasing export markets for agricultural products and food, opening access to more export markets, addressing global trade distortions, multi-lateral agreements, protectionism, impact of agricultural imports to US producers and reaching global consumers with agricultural products

Comments:

Issue 15 – Educational Impact on Agriculture**1 2 3 4 5**

Educational Impact on Agriculture integrating various campus disciplines in support of agriculture, training and development of employees, helping educators to remain current on agricultural trends and issues, need for more funding, strengthening the relationship between agriculture and education, positioning agriculture as science, enhancing the performance of educators and promoting the new careers opportunities in agriculture.

Comments:

Issues 16 – Research Impact on Agriculture**1 2 3 4 5**

Research Impact on Agriculture includes striking a balance between public and private agricultural research, need for more public research funding and new research in specialty crop areas.

Comments:

Issue 17 – Changes in Agribusiness**1 2 3 4 5**

Changes in Agribusiness include industry consolidation (from inputs to retailers), concentration, inefficiencies in the agricultural supply chain, poor utilization of working capital, large farm and ranch takeover, infrastructure changes, size, scale, scope, concentration, vertical and horizontal integration, futures, and the influence of externalities associated with agriculture.

Comments:

Issue 18 – Impacts on Production Agriculture**1 2 3 4 5**

Impacts on Production Agriculture includes profitability (low prices and rising costs), enhancing marketing effort for crops and livestock, development of business plans for farms and ranches, impact of organic farming vs. conventional farming, future of the family farm concept, contract farming vs. independent farming, weather risks, remaining solvent in challenging times, market stability, commodity prices, land values, development of innovative production practices, impact of regulations, water and land conservation, use of wind energy, control of plant pest and animal diseases, improved return on investment, controlling labor costs and better farm business management.

Comments:

Issue 19 – Technology and Innovation in Agriculture**1 2 3 4 5**

Technology and Innovation in Agriculture includes GMO, irrigation, traditional breeding, new production practices, use of computers, satellites, wireless communications, biotechnology use and acceptance, intellectual property rights, genetically modified crops, BST, bio-based economy, proteonomics, GPS/GIS, and the speed of change.

Comments:

Issue 20 – Food Supply and Safety in Agriculture**1 2 3 4 5**

Food Supply and Safety in Agriculture includes bioterrorism, food safety assurance, global, food distribution, biosecurity, health and nutrition, growing disparity of food distribution on a global scale, invasive species, bio threats, detecting, verifying controlling, product recall, producer protection from bioterrorism, genetic foods, adulterated foods, traceability, product purity and production practice information.

Comments:

Issue 21 – Federal Regulations Impacting Agriculture 1 2 3 4 5

Federal Regulations Impacting Agriculture includes issues that affect producers and agribusiness in the areas of environment, farmland preservation, research, trade, crop protection and animal health.

Comments:

Issue 22 – Declining Voice of the Farmer 1 2 3 4 5

Declining Voice of the Farmer includes concerns related the political influence and advocacy for those individuals involved in production agriculture.

Comments:

Issue 23 – Taxes, Estate Plan. and Transf. of Assets in Ag. 1 2 3 4 5

Taxes, Estate Planning and Transfer of Assets in Agriculture includes providing guidance and assistance to farmers and ranchers who are managing current operations and attempting to ensure the successful transition of operations to future generations.

Comments:

Issue 24 – Labor in Agriculture 1 2 3 4 5

Labor in Agriculture includes the recruitment, retention and support of quality farm labor and issues related to the legal and safety requirements for the hiring of farmer laborers.

Comments:

Now that you have completed the round two, if you have any other agricultural trends and issues that you think we have missed, please list them below. Also, if you believe some of the existing issues should be combined, please indicate that in the space provided.

Trends and Issues in Agriculture

APPENDIX F

ROUND THREE EDUCATIONAL ISSUES INSTRUMENT

Survey **Educational Trends and Issues** **Round 3**

Welcome to Round Three! In Round Two, a panel of educational experts from across the nation rated forty emerging trends and issues. These trends and issues had been compiled into a group of nineteen key trend and issue statements.

In round three, you are being asked to rate and rank **nineteen** priority items based on the importance of that particular issue in regards to the future of education. You will also notice that at the end of the instrument there is space provided for you to share additional thoughts that you think may have been missed in round two.

Please rate each issue from 1 to 5 as follows: **1 = not important; 2 = somewhat important; 3 = important; 4 = very important; 5 = extremely important.** For each issue, please feel free to share any thoughts you have for improving or enhancing the issue's description. You are also being asked to rank each item with **1** being most important and **19** being least important in regards to the future of education. This will not be an easy task, but it is necessary in order to for the researcher to get a prioritized list. Also, at the end of the instrument you will find space provided for you to share any areas that you think we may have missed in round two.

After you have completed the survey, you may respond to me via email or fax (919.515.9060) or mail (Marshall Stewart, NCSU, Box 7607, Raleigh, NC 27695). You should receive round three (final round) in a few weeks. I am requesting that you return your survey to me by **March 7, 2003**. Thank you for taking time to complete this survey.

	<u>Rating</u>	<u>Rank</u>
Issue 1 – Standards	1 2 3 4 5	_____
Standards includes the heavy emphasis on academic achievement, the disagreements in the education community regarding what standards should look like, alignment of career and technical education with standards and maintaining high quality standards while providing flexibility to address local needs.		
Comments:		

	<u>Rating</u>	<u>Rank</u>
Issue 2 – Finance/Budget Finance/Budget in includes basic education funding, scarce public financial resources to support education, property tax vs. state and federal funding scenarios, equity of funding between schools, and funding school facilities improvements, curriculum development, programs and salaries. Comments:	1 2 3 4 5	_____
Issue 3 – Teacher Recognition and Reward Teacher Recognition and Reward includes paying competitive salaries to qualified teachers, improving the status and quality of life for skilled teachers, creating incentives to rewards excellent teaching and raising the salaries of all educators. Comments:	1 2 3 4 5	_____
Issue 4 – Educational Leadership Educational Leadership includes recruiting qualified people to run for school boards, ensuring that elected leaders understand all facets of education, addressing the principal shortage and balancing governance roles and authority among local, state and federal entities. Comments:	1 2 3 4 5	_____
Issue 5 – Curriculum Curriculum includes the updating of outdated curriculum, identifying what students need to know, the appropriate selection and use of curriculum, infusing international aspects, infusing more science and technology, integration of subject matter, increasing academic rigor and managing the volume of new information that is being created. Comments:	1 2 3 4 5	_____

	<u>Rating</u>	<u>Rank</u>
Issue 6 – Teacher Education Teacher Preparation includes making sure that universities are not out of touch with real world of education, funding and sustaining teacher education programs, identifying and replicating best teacher education practices and providing quality certification programs Comments:	1 2 3 4 5	_____
Issue 7 – Legislative/Policy Legislative/Policy includes implementation of state and federal mandates, coping with the volatility of politics, No Child Left Behind Act, Perkins Act, quick fix reactions instead of systemic and long-term improvements and the legislation regulating the privatization of public schools. Comments:	1 2 3 4 5	_____
Issue 8 – Accountability and High Stakes Testing Accountability includes the development of instructional strategies to improve student performance at the middle and high school levels, intervention strategies for low performing schools, high school exit exams, standards for accountability, authentic assessment, closing the achievement gap between various groups, the impact of accountability on elective courses, impact of No Child Left Behind, negative impacts on teaching and loss of childhood due to over-emphasis on testing. Comments:	1 2 3 4 5	_____

	<u>Rating</u>	<u>Rank</u>
Issue 9 – Teacher Recruitment/Retention Teacher Recruitment/Retention includes discussion of the teacher shortage, credentialed teachers and teacher availability/competence. Includes the availability of teachers who teach students rather than teach content, keeping quality personnel in teaching roles, teachers as role models for values and morals, willingness of teachers to change, finding qualified and credentialed teachers, teacher professionalism, impact of alternative certification teacher certification, teacher licensure differences and inconsistencies and the significant loss of master teachers during the next few years to retirement. Comments:	1 2 3 4 5	
Issue 10 – Family/Community Involvement Family/Community Involvement includes the lack of external involvement in schools today, parental support of students, parental trust in school systems, need for improved parenting skills, changing the “college bound only” mentality of many parents and community citizens. Comments:	1 2 3 4 5	
Issue 11 – Teaching/Instructional Strategies Teaching/Instructional Strategies includes the development of Individualized learning plans for all students, determining the best delivery methods, moving to a learner-centered teaching approach, problem-based learning and reaching bored, unmotivated students. Comments:	1 2 3 4 5	

	<u>Rating</u>	<u>Rank</u>
Issue 12 – Educational Research Educational Research includes the continuing investment and priority on educational research, sharing of educational research findings with teachers and leveraging the investment in research for improving student achievement. Comments:	1 2 3 4 5	_____
Issue 13 – Industry Connection Industry Connection includes the need for more collaborations and partnerships with industry and addressing the concerns of educators regarding interference in schools from the business community. Comments:	1 2 3 4 5	_____
Issue 14 – Prof. Dev. and Attitudes Professional Development and Attitudes includes the need for teachers to be technically update-to-date in the subject area and to provide quality training opportunities. Comments:	1 2 3 4 5	_____
Issue 15 – Teacher Attitude Teacher Attitude includes the issues of teacher morale and enthusiasm for their profession. Comments:	1 2 3 4 5	_____
Issue 16 – Classroom Management/Discipline Classroom Management and Discipline includes those issues related to the teacher and school administration’s ability to provide a positive learning environment. Comments:	1 2 3 4 5	_____

	<u>Rating</u>	<u>Rank</u>
Issue 17 – Public Perception/Awareness Public Perception/Awareness includes the need to improve the image of the public schools, to have public relations efforts, to enhance the image of teaching, to increase the public support of schools and to change the mind-set that every student must get a four-year college degree. Comments:	1 2 3 4 5	_____
Issue 18 – State Leadership State Leadership includes the negative impact that downsizing in state departments of education have had on schools and the resulting lack of technical assistance for teachers. Comments:	1 2 3 4 5	_____
Issue 19 - Role of Public Education Role of Public Education includes a detailed review of the purposes (a definition) of public education and what the public does and should expect from the public schools. Comments:	1 2 3 4 5	_____

Now that you have completed the round two, if you have any other educational trends and issues that you think we have missed, please list them below. Also, if you believe some of the existing issues should be combined, please indicate that in the space provided.

Trends and Issues in Education

APPENDIX G
ROUND THREE AGRICULTURAL ISSUES INSTRUMENT

**Survey
Agricultural Trends and Issues
Round 3**

Welcome to Round Three! In Round Two, a panel of agricultural experts from across the nation rated twenty-four emerging trends and issues. These trends and issues had been compiled into a group of twenty-four key trend and issue statements from an initial list of 180 items. After the second round of the study, the list of trends and issues has been narrowed to seventeen.

In round three, you are being asked to rate and rank **seventeen** priority items based on the importance of that particular issue in regards to the future of agriculture. You will also notice that at the end of the instrument there is space provided for you to share additional thoughts that you think may have been missed in round two.

Please rate each issue from 1 to 5 as follows: **1 = not important; 2 = somewhat important; 3 = important; 4 = very important; 5 = extremely important.** For each issue, please feel free to share any thoughts you have for improving or enhancing the issue's description. You are also being asked to rank each item with **1** being most important and **17** being least important in regards to the future of agriculture. This will not be an easy task, but it is necessary in order to for the researcher to get a prioritized list. Also, at the end of the instrument you will find space provided for you to share any areas that you think we may have missed in round one.

After you have completed the survey, you may respond to me via email or fax (919.515.9060) or mail (Marshall Stewart, NCSU, Box 7607, Raleigh, NC 27695). You should receive round three (final round) in a few weeks. I am requesting that you return your survey to me by **February 7, 2003**. Thank you for taking time to complete this survey.

	<u>Rating</u>	<u>Rank</u>
Issue 1 – Farm Bill Implications	1 2 3 4 5	_____
Farm Bill Implications includes issues related to the changes in and implementation of the Farm Bill and its impact on farmers, ranchers and agribusiness.		
Comments:		

	<u>Rating</u>	<u>Rank</u>
Issue 2 – Consumer Impact on Agriculture Consumer Impact on Agriculture includes the preferences of customers, value-added, convenience, ready-to-eat, portion control, costs, taste and nutrition. Comments:	1 2 3 4 5	_____
Issue 3 – Rural Issues and Agriculture Rural Issues and Agriculture includes the social and societal issue of the rural areas, transfer of assets to the next generation, estate planning, development of employment opportunities as supplemental income to producers, health in rural areas, recreational and interaction opportunities. Comments:	1 2 3 4 5	_____
Issue 4 – Environmental Influence on Agriculture Environmental Influence on Agriculture includes protection of endangered species, water quality, nutrient management, animal waste, the impact of high production agriculture, regulation compliance and restrictions, stewardship of natural resources and land use conflicts. Comments:	1 2 3 4 5	_____
Issue 5 – Urban Growth/Sprawl Impact on Ag. Urban Growth/Sprawl Impact on Agriculture includes encroachment, conflicts, odor, smoke, dust, noise, coordination of planning, restrictions on development, loss of productive farmland and farmland conversion. Comments:	1 2 3 4 5	_____

	<u>Rating</u>	<u>Rank</u>
Issue 6 – Youth in Agriculture Youth in Agriculture includes retention of youth in agriculture, making it financially possible for youth to farm, increasing the interest that students have in agricultural careers, assuring farm youth that they can continue in production agriculture, helping youth interested in production agriculture get started and identifying and training farm and rural leadership. Comments:	1 2 3 4 5	_____
Issue 7 – Public Awareness/Understanding in Ag. Public Awareness/Understanding in Agriculture includes agricultural literacy, global acceptance of new food technology in biotechnology and genetic engineering, community acceptance of agriculture as a neighbor, positioning agriculture as an economic growth area, changing the provincial view of agriculture in cities and among educators, consumer acceptance of GMO's and irradiation, improving consumer confidence, understanding of need for crop protection tools and updating consumers on what agriculture is, what it does and how it works. Comments:	1 2 3 4 5	_____

	<u>Rating</u>	<u>Rank</u>
Issue 8 – Alternative Uses for Ag. Products Alternative Uses for Agricultural Products includes increasing the use of alternative fuels, positioning agriculture as a primary source of energy (alcohol) and feed stocks (corn fibers), systems farming (hunting, agri-tourism), use of agricultural products for disease control and prevention and renewable fuels usage with mainstream consumers. Comments:	1 2 3 4 5	_____
Issue 9 – Water Issues in Agriculture Water Issues in Agriculture includes the availability and access of potable water for use in agricultural enterprises and rural communities. Comments:	1 2 3 4 5	_____
Issue 10 – Land Issues in Agriculture Land Issues in Agriculture includes the availability and protection of productive farmland and green spaces as a part of the agricultural economy and environment. Comments:	1 2 3 4 5	_____
Issue 11 – Trade Issues in Agriculture Trade Issues in Agriculture include increasing export markets for agricultural products and food, opening access to more export markets, addressing global trade distortions, multi-lateral agreements, protectionism, impact of agricultural imports to US producers and reaching global consumers with agricultural products. Comments:	1 2 3 4 5	_____

	<u>Rating</u>	<u>Rank</u>
Issues 12 – Research Impact on Agriculture Research Impact on Agriculture includes striking a balance between public and private agricultural research, need for more public research funding and new research in specialty crop areas. Comments:	1 2 3 4 5	_____
Issue 13 – Changes in Agribusiness Changes in Agribusiness include industry consolidation (from inputs to retailers), concentration, inefficiencies in the agricultural supply chain, poor utilization of working capital, large farm and ranch takeover, infrastructure changes, size, scale, scope, concentration, vertical and horizontal integration, futures, and the influence of externalities associated with agriculture. Comments:	1 2 3 4 5	_____
Issue 14 – Impacts on Production Agriculture Impacts on Production Agriculture includes profitability (low prices and rising costs), enhancing marketing effort for crops and livestock, development of business plans for farms and ranches, impact of organic farming vs. conventional farming, future of the family farm concept, contract farming vs. independent farming, weather risks, remaining solvent in challenging times, market stability, commodity prices, land values, development of innovative production practices, impact of regulations, water and land conservation, use of wind energy, control of plant pest and animal diseases, improved return on investment, controlling labor costs and better farm business management. Comments:	1 2 3 4 5	_____

	<u>Rating</u>	<u>Rank</u>
Issue 15 – Technology and Innovation in Ag. Technology and Innovation in Agriculture includes GMO, irrigation, traditional breeding, new production practices, use of computers, satellites, wireless communications, biotechnology use and acceptance, intellectual property rights, genetically modified crops, BST, bio-based economy, protenomics, GPS/GIS, and the speed of change. Comments:	1 2 3 4 5	_____
Issue 16 – Food Supply and Safety in Agriculture Food Supply and Safety in Agriculture includes bioterrorism, food safety assurance, global, food distribution, biosecurity, health and nutrition, growing disparity of food distribution on a global scale, invasive species, bio threats, detecting, verifying controlling, product recall, producer protection from bioterrorism, genetic foods, adulterated foods, traceability, product purity and production practice information. Comments:	1 2 3 4 5	_____
Issue 17 – Federal Regulations Impacting Ag. Federal Regulations Impacting Agriculture includes issues that affect producers and agribusiness in the areas of environment, farmland preservation, research, trade, crop protection and animal health. Comments:	1 2 3 4 5	_____

Now that you have completed the round three, if you have any other agricultural trends and issues that you think we have missed, please list them below. Also, if you believe some of the existing issues should be combined, please indicate that in the space provided.

Trends and Issues in Agriculture

APPENDIX H
REQUEST FOR NOMINATIONS

August 21, 2002

Memo

**To: State Agricultural Education Leaders
University Agricultural Education Faculty
Agriculture Teachers
National Agricultural Education Leaders**

From: Marshall Stewart, State Agricultural Education Coordinator

Subject: Request for Nominees to Serve on a National Study

The purpose of this email is to ask for your assistance in identifying “educational” and “agricultural” leaders across the nation. I am attempting to develop a population of leaders from these two categories that *may* be invited to serve on an expert panel for a research study that I am conducting in my doctoral program. The title of the study is **“Emerging Agricultural and Educational Trends and their Impact on the Secondary Agricultural Education Program.”** The goal of this study is to determine the emerging trends in agriculture and in education and ascertain what implications they may have on the future of the agricultural education program. My hope is that this study will help to provide direction for continued improvement of the agricultural education program.

I am asking you to submit up to three names for each category, education and agriculture. I hope to include individuals that cover a broad spectrum of education and agriculture. Examples might include: commodity leaders, school superintendents, national food and fiber policy leaders, university leaders, etc. Your assistance in identifying individuals that you are familiar with for this study is greatly appreciated.

I will need the following information for the nominees that you submit to me: name, title, organization, address, telephone number, fax number, and email (*if possible*). I have attached a form for you to complete regarding the individuals that you nominate. Please note that the form is divided into agricultural and educational leaders. It is important that the individuals be assigned to the correct category. I have also included space for you to use in providing me some brief descriptive information about each individual.

Thank you for your assistance. I would appreciate a response from you by **September 3, 2002**. I can be reached at marshall_stewart@ncsu.edu. If you prefer, you may fax your responses to me at 919.515.9060.

APPENDIX I
REQUEST FOR NOMINATIONS

September 16, 2002

Memo

**To: State Agricultural Education Leaders
 University Agricultural Education Faculty
 Agriculture Teachers
 National Agricultural Education Leaders**

From: Marshall Stewart

Subject: Follow-up request for nominees to serve on National Study.

This is a follow-up request to the agricultural education profession. Since August 21, we have been soliciting and receiving nominations for educational and agricultural experts to serve on a national panel for a doctoral study entitled, **“Emerging Agricultural and Educational Trends and their Impact on the Secondary Agricultural Education Program.”** Many of you have already submitted nominees. However, I am attempting to get as much representation from different states and different regions of the nation as possible. I asking you to submit up to three names for each category, education and agriculture. I hope to include individuals that cover a broad spectrum of education and agriculture. Examples might include: school superintendents, national food/fiber leaders, education policy experts, commodity leaders, etc. Your assistance in identifying nominees is greatly appreciated.

Please use the attached form and submit nominees directly to me by email (marshall_stewart@ncsu.edu) or fax (919.515.9060). I have also attached the letter sent earlier for your information and review.

The deadline for receiving nominees is September 20, 2002. If you have already sent nominees, please accept my sincere thanks. I look forward to hearing from you.

APPENDIX J
ROUND ONE LETTER

September 16, 2002

Mr/Ms/Dr.

Dear:

Thank you for agreeing to serve on the **agriculture** expert panel for a national study to identify the emerging agricultural and educational trends and their impact on the agricultural education program. My hope is that this study will help to provide direction for the continued improvement of the agricultural education program. This is the first survey of three rounds that you will receive as a participant in this study. Your participation is greatly appreciated.

Using the attached survey instrument, I am asking you to identify **up to ten** of the most important issues facing **agriculture** in the future. Your opinions and input are greatly appreciated and critical to the success of this study.

Please return your results to me via mail, fax or email by September 23, 2002. Thanks again for your input and I look forward to hearing from you.

Sincerely yours,

Marshall Stewart

APPENDIX K
ROUND ONE LETTER

September 16, 2002

Mr/Ms/Dr.

Dear:

Thank you for agreeing to serve on the **education** expert panel for a national study to identify the emerging agricultural and educational trends and their impact on the agricultural education program. My hope is that this study will help to provide direction for the continued improvement of the agricultural education program. This is the first survey of three rounds that you will receive as a participant in this study. Your participation is greatly appreciated.

Using the attached survey instrument, I am asking you to identify **up to ten** of the most important issues facing **education** in the future. Your opinions and input are greatly appreciated and critical to the success of this study.

Please return your results to me via mail, fax or email by September 23, 2002. Thanks again for your input and I look forward to hearing from you.

Sincerely yours,

Marshall Stewart

APPENDIX L
ROUND TWO LETTER

January 21, 2003

Dear Study Participant:

Thank you for agreeing to participate in my graduate study entitled, **“Emerging Agricultural and Educational Trends and their Impact on the Secondary Agricultural Education Program.”** I have attached the second round survey instrument to this memo. In the first round a total of **264** emerging educational issues and trends were identified. These issues have been compiled into **forty key trend and issue statements**. Please take a few minutes and rate the importance of each issue in regards to the future of education. I have also provided space for you to use if you have further comments to share regarding each statement.

I appreciate your cooperation with this study. Your participation is valued and I am very grateful. As you complete and return the survey, please feel free to email or call me with any questions that you may have. If possible, I would like to have your response by February 7, 2003.

Sincerely yours,

Marshall Stewart

APPENDIX M
ROUND TWO LETTER

December 10, 2002

Dear Study Participant:

Thank you for agreeing to participate in my graduate study entitled, **“Emerging Agricultural and Educational Trends and their Impact on the Secondary Agricultural Education Program.”** I have attached the **second round** survey instrument to this memo. In the first round a total of 180 emerging issues and trends were identified. These issues have been compiled into twenty-four key trend and issue statements. *Please take a few minutes and rate the importance of each issue in regards to the future of agriculture.* I have also provided space for you to use if you have further comments to share regarding each statement.

I appreciate your cooperation with this study. Your participation is valued and I am very grateful. As you complete and return the survey, please feel free to email or call me with any questions that you may have. If possible, I would like to have your response by December 20, 2003.

Sincerely yours,

Marshall Stewart

APPENDIX N
ROUND THREE LETTER

February 27, 2003

Dear Study Participant:

First, let me thank you for your patience and participation in my doctoral study. Your willingness to serve on the Education Expert Panel has been invaluable for me. I have attached round three of the study for you. Please take a few minutes to complete the survey instrument. You will see that on this final round I am asking you to rate the nineteen critical issues and then rank them in order of their importance to the future of education. I would appreciate your responses by **March 7, 2003**.

Thanks again for your participation. I look forward to the results of the study and I believe it will be of great value to the agricultural education profession.

Sincerely,

Marshall Stewart

APPENDIX O
ROUND THREE LETTER

January 23, 2003

Dear Study Participant:

First, let me thank you for your patience and participation in my doctoral study. Your willingness to serve on the Agricultural Expert Panel has been invaluable for me. I have attached round three of the study for you. Please take a few minutes to complete the survey instrument. You will see that on this final round I am asking you to rate the seventeen critical issues and then rank them in order of their importance to the future of agriculture. I would appreciate your responses by February 7, 2003.

Thanks again for your participation. I look forward to the results of the study and I believe it will be of great value to the agricultural education profession.

Sincerely,

Marshall Stewart